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MEETING COMPETITION—

of other forms of transportation is one of the major problems confronting the railroads. Its solution calls for higher average speeds in both freight and passenger service.

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RAILWAY AGE

The Association of American Railroads

The decision of the railway executives to create the Association of American Railroads probably will prove to be one of the most important events in railroad history. To make it effective will involve delegation of much more power to the new association by directors of solvent railways and by courts administering bankrupt railways than ever has been possessed by any or all railroad associations.

What can the new organization do? The preamble of the articles of association states that it is created to "further improve railroad service and maintain the integrity and credit of the industry" by establishing "an authoritative national organization which shall be adequately qualified and empowered in every lawful way to accomplish said ends where concert of policy and action are required." There is no limitation in this language upon doing things requiring "concert of policy and action" excepting in the word "lawful." Questions arising as to what is lawful will be dealt with as they are raised.

New Conditions—New Organization

The railroads are being organized as an industry as neither they nor any other American industry has been organized because of the development of new conditions. They are confronted with unprecedented outside competition. This requires concert of policy and action both to secure federal and state legislation to equalize terms of competition in transportation, and to develop facilities and methods that in any case will be needed to meet outside competition. Owing to changes in economic conditions and outside competition the volume of railway traffic has been greatly reduced and the cost of carrying each ton and passenger increased. Large economies in operation will be required whether to make possible rates that will help to recover traffic or to increase the net earnings derived from a continued reduced volume of traffic. To accomplish such economies it will be necessary to reduce and limit railway competition, while making railway service more rather than less convenient and otherwise attractive.

Duplications and Operating Expenses

The new organization will have divisions to deal with all the problems of the industry and a board of directors, executive committee and president with authority to direct the divisions. The railroads would not be built now with existing duplications of lines, terminals, stations and service. The Planning and Research and the Operations and Maintenance divisions can co-operate in investigating and deciding where duplications can be eliminated and many other things done with advantage both to individual lines and the industry. The information being compiled by the Federal Co-ordinator's staff and the co-ordinating committees of executives will be useful in this connection. Obstacles to accomplishment will be met. Individual companies have advantages which they cannot be expected to forego excepting in exchange for compensating advantages. The labor provisions of the Emergency Transportation Act must be modified if substantial economies are to be effected. Much elimination of needlessly expensive duplication of facilities and service can, however, be achieved by methods and on terms advantageous to the industry, to each individual line and to railway employees if a policy for that purpose is intelligently developed and courageously pursued.

Nobody needs fear the results of a fair policy for this purpose. It is essential to increasing net earnings and credit. Repeated experience, including recent experience, shows how all benefit by an increase of railway net earnings and suffer from a decline of it. Increase of net earnings prior to May caused security prices to advance and both employment and buying to increase. The decline of net earnings which then began has reduced security prices, buying and employment. Labor

leaders and employees above all need to learn that employment varies with net earnings and that no legislative or labor union policies can prevent this. Because of a period of increased net earnings the number of railway employees increased almost 100,000 between June, 1933, and June, 1934. Because of later reduced net earnings it was in July, about 6,500 and in August about 23,000 less than in June. Real economies and retrenchment are widely different things. Real economies increase the net earning capacity of the industry and are more likely to increase than reduce its employment, because they tend to make possible rates which will attract more traffic. Retrenchment always reduces employment. A policy which promotes real economies is, therefore, always better for employees than one that compels retrenchment.

Traffic and Legislation

The new association will have a division of traffic. This is a departure from precedent necessary to its purposes. Railway competition in rate-making due largely to the pressure of big shippers and communities has been the cause of many unjust discriminations and reductions of rates that have unnecessarily impaired earning capacity. It is to be presumed that the new Traffic division will study and supervise rate-making to promote only advances or reductions in the interest of the industry and will have helpful contact with the Interstate Commerce Commission. No doubt, also, with the collaboration of the division of Planning and Research it will study all means of increasing railway traffic. There has been no weakness in previous national railway associations more patent or serious than their virtual lack of any authority in traffic matters. In regard to traffic, operation and service, initiative will remain with the individual railways, but subject to review and negative when exercised contrary to the interest of the industry.

The law division will "deal with questions of legislation, government action and policies, and matters of a legal nature." This means state as well as federal policies. With respect to many matters, and especially outside competition, state transportation policies are quite as important as federal. Subsidies to waterways are derived from the federal treasury; subsidies to highway motor carriers from both the federal and state treasuries.

Comparable regulation of all carriers regarding service and rates in the interest of fairness, public safety and sound public policy generally can be established only by both federal and state legislation. An organization active both at Washington and all state capitals is therefore essential to securing for the railways the equality of treatment with other carriers to which they are entitled.

Government Should Not Be Represented

The avowed objective of the Roosevelt administration has been "self-regulation of industry," but it has done many things apparently calculated to establish government control of all industry. The railways were the most government-regulated large industry prior to the passage of the act creating a federal co-ordinator and subjecting them to increased interference. They have now become the first large industry to form an organization with the avowed purpose and adequate power of self-regulation. Federal Co-ordinator Eastman has made a public statement welcoming their action as a move in the right direction. This has been followed by a statement by Jesse H. Jones, chairman of the Reconstruction Finance Corporation, advocating representation of "the public and the government" on the board of directors of the Association of American Railroads.

The government has loaned the railroads money through the Reconstruction Finance Corporation and Public Works Administration. This may seem to give it a claim to a voice in the new association. But many railways have not borrowed from the government and do not want the government to have any more voice in their affairs.

The purposes of the new organization are to provide means by which the industry may itself solve as many of its problems as possible and may deal with the government regarding other problems. There could be no frankness of discussion regarding dealings with the government in a meeting of directors part of whom represent the government. Mr. Jones's suggestion is one to kill the new association at its birth by adopting a policy that would make its functioning as intended impossible from its inception. The railroads should never agree to government representation in the American Association of Railroads.

Meet Management Issue Squarely

Regulation and management are different things. The railways already have plenty of regulation. This association is being formed by management to improve management, and the managers should insist that they be allowed to manage. Only the test of experience will show how much the new association can accomplish, but it has great potentialities. The better it works the less real or apparent need there will be for government interference. In the interest of both railways and public it should be given a thorough trial. If the government does not want to make more loans without having more of a hand in management, let it keep its money. If it insists upon having either the participation in management that Chairman Jones suggests or complete management, then let it take complete management and complete responsibility.

Industry in this country has lost too much already by paltering with questions of principle because of fear of what government might do. If the issue arises we hope the railways will be among the first industries to take an unalterable stand against more government in business, and then let the government do whatever it likes about it.

Association of American Railroads Organized

John J. Pelley

Single authoritative national organization to take initiative in attacking the problems of the industry

R. H. Aishton

A PLAN for the formation of the Association of American Railroads, as a consolidation of the American Railway Association, the Association of Railway Executives, and other railroad associations and organizations, for the purpose of establishing a single authoritative national organization to represent the roads where concert of policy and action are required, and to take the initiative in attacking the problems which confront the industry, was approved and adopted at a joint meeting of the executives of member roads of the two associations at Chicago on September 21. The plan had been approved and recommended to the member roads on the day before by the advisory committee of the Association of Railway Executives and the board of directors of the American Railway Association, following recommendations submitted by a special committee which was appointed at a meeting of the executives in July.

As explained in a statement issued after the meeting: "The railroad executives who have formulated the plan regard it as a concerted effort to protect and advance the railroad industry under private ownership and management, to enable them better to handle their own affairs on a permanent basis, as well as to co-operate more effectively with the government in constructively working out a program in the interest of the owners of the railroad properties, their employees, and the public."

J. J. Pelley Elected President

John J. Pelley was elected president of the new association. To accept the position he will resign as president of the New York, New Haven & Hartford. The organization will have its headquarters in Washington, but branch offices may be established in New York and Chicago, and possibly elsewhere as required. The president will devote his full time to its affairs, being paid a salary of $60,000 a year, which is now the maximum paid by any railroad under the agreement reached last year with Co-ordinator Eastman. He will act under the general supervision and control of a board of directors consisting of himself and 14 railroad chief executives, five to be nominated by the Eastern Presidents' Conference, six by the Western Association of Railway Executives, and three by the Southeastern Presidents' Conference. There will also be an executive committee of five members of the board and the president, who will be ex officio chairman of the board and of the executive committee. The committee will be regarded as in continuous session and will interest itself in matters affecting the railroad industry and recommend "such constructive policies as will promote efficiency and economical operation." The president will be assisted by five vice-presidents in charge respectively of departments of law; operations and maintenance; traffic; finance, accounting, taxation, and valuation; and planning and research. The work of the several departments may be subdivided into divisions. R. V. Fletcher, who has been vice-chairman and general counsel of the Association of Railway Executives, has been elected vice-president in charge of the law department and general counsel of the new organization, Alfred P. Thom has been elected associate general counsel, and J. Carter Fort general solicitor. The other officers will be elected by the board after the plan has been ratified formally by the members by the execution of written agreements.

Purposes of the Plan

"The railroads recognize the need," according to the statement, "for a forceful, independent organization to act in the capacity of a general staff for the railroads as a whole, merging under one authoritative direction the activities of the present railroad associations and organizations. The new organization will take the initiative in attacking the problems which confront the industry, retaining the beneficial activities of existing regional groups and instituting energetic study and action on all subjects related to American railroad progress.

"The new organization constitutes an aggressive and determined effort to deal with common problems. It is the purpose of this movement to include every phase

of railroad transportation and to employ every constructive approach, not merely in the solution of difficulties, but in hastening and directing the improvement and development of the industry.

"The present situation of the railroads, as well as their future part in the economic growth of the country, calls for constant, inspiring leadership and direction which can be attained only through initiative and co-operation within the industry. The association of American Railroads is being established to achieve this co-ordination in such a way as will promote the best interests of each road by advancing the common welfare of all.

"The existing regional organizations and their related and subordinate organizations will preserve their identities and activities, co-operating with The Association of American Railroads."

Other Railroad Organizations May Also Be Merged

The resolution under which the plan was approved also specifically states that it contemplates that the Bureau of Railway Economics and the Railroad Accounting Officers' Association shall likewise be consolidated with and become a part of the Association of American Railroads, as of the date when the plan becomes effective, and the board of directors was authorized to enter into such agreements and arrangements as may be necessary to bring into the association any other railroad organizations within the scope of the plan upon such terms as may be fair and equitable, reporting their actions, if any, in this respect, to the roads' members of the association. The American Railway Association now comprises a dozen or more associations that were formerly independent.

"More Perfect Union" Contemplated

One object of the plan is to carry out suggestions made by Co-ordinator Eastman in his report to President Roosevelt last January that the railroads form a "more perfect union" and it had been discussed beforehand both with the President and with Mr. Eastman, who issued a statement following the announcement of its approval referring to it as a "'gratifying step in the right direction."

As one of the purposes is to create a stronger central authority representing the roads, with power to act decisively and promptly in the common interest, the members agree that, in any controversy over which the board of directors has assumed jurisdiction and has decided by the affirmative vote of three-fourths or more of its members, they will accept and carry out such decision or, within 20 days, institute arbitration proceedings. Decisions of the arbitrators are to be rendered within 60 days and the awards are to be "conclusive and binding." The roads will agree to be bound by the provisions of the plan so long as they remain members, reserving the right to cease to be a member after 90 days' notice of intention to withdraw.

Formal Assents Required

Although assent to the plan was signified by votes of 105 railroads, the Pullman Company, and the Railway Express Agency at the meeting on September 21 for a resolution approving and adopting it, the plan does not become effective until after roads representing three-fourths of the mileage of the roads now belonging to the American Railway Association, the Association of Railway Executives, the Bureau of Railway Economics, and the Railway Accounting Officers' Association have executed written agreements assenting to the plan, which in many instances will require action by the boards of directors. When the vice-chairman of the A. R. E., R. V. Fletcher, shall have received a sufficient number of such agreements, he is to give notice to the board of directors and at the same time call a meeting of the board to complete the organization of the association. At such meeting the board will fix a date upon which the plan shall become effective. The four present associations will continue in their present activities until that date but will then cease to exist.

Board of Directors Elected

The following were elected members of the first board of directors of the association to hold office until their successors are elected and assume office as provided in the plan: General W. W. Atterbury, president, Pennsylvania; J. J. Bernet, president, Chesapeake & Ohio; L. W. Baldwin, trustee, Missouri Pacific Lines; W. R. Cole, president, Louisville & Nashville; L. A. Downs, president, Illinois Central System; C. R. Gray, president, Union Pacific System; Hale Holden, chairman, Southern Pacific Lines; Fairfax Harrison, president, Southern Railway System; J. J. Pelley, president, New York, New Haven & Hartford; H. A. Scandrett, president, Chicago, Milwaukee, St. Paul & Pacific; F. W. Sargent, president, Chicago & North Western System; Daniel Willard, president, Baltimore & Ohio; F. E. Williamson, president, New York Central Lines, and Ralph Budd, president, Chicago, Burlington & Quincy.

When Mr. Pelley resigns as president of the New Haven another director will be elected.

Following is the text of the plan as approved:

Plan of Organization

In order to promote trade and commerce in the public interest, further improve railroad service and maintain the integrity and credit of the industry, the Railroad Companies of the United States do hereby establish an authoritative national organization which shall be adequately qualified and empowered in every lawful way to accomplish said ends where concert of policy and action are required. For the purpose of facilitating the realization of this constructive object, the members do hereby declare that these announced policies shall be authoritative and will be supported.

ARTICLE 1. (a) The organization shall be styled the Association of American Railroads, hereinafter called the Association. It is created to deal expeditiously and effectively with all matters of general interest to the industry, within the scope of the foregoing preamble.

(b) The existing regional organizations known, respectively, as

Eastern Presidents' Conference,
Western Association of Railway Executives,
Southeastern Presidents' Conference,

and their related or subordinate associations and organizations will preserve their identities and activities, cooperating with the Association.

ARTICLE 2. In addition to carrying out the purposes stated in the preamble hereof, the object is to coordinate the activities of the several associations dealing, directly or indirectly, with subjects connected with the American railroads.

ARTICLE 3. (a) All American steam railroads, except those operating less than one hundred miles of road, including trackage rights, and except those operated primarily as plant facilities, shall be eligible to membership. The Board of Directors may admit to membership railroad, switching or terminal companies with annual operating revenues in excess of one million dollars.

(b) The Board of Directors may admit to the Association as Associate Members without voting rights, carriers which, in the judgment of the Board, are not eligible for full membership as provided in Article 3 (a). The Board shall fix a flat rate for the annual dues of Associate Members, not subject to the further assessment provided in Article 20.

ARTICLE 4. (a) The general supervision and control of the affairs of the Association shall be committed to a Board of Directors, to be selected annually by the railroads members of the Association, who shall hold office for one year or until their successors are elected.

(b) The Board of Directors shall consist of fifteen members: fourteen railroad chief executives—five from Eastern territory, including New England, six from Western territory, and three

from Southern territory--and the President of the Association, who shall be ex officio Chairman of the Board of Directors.

(c) The Board of Directors shall elect the officers of the Association, fix their compensation and the terms of their employment.

(d) The Board of Directors shall meet regularly each month at a time and place to be designated by the Board. Special meetings of the Board may be called by the President, or, upon request of not less than three members of the Board, shall be called, at a time other than the stated period. A majority of the Board of Directors shall constitute a quorum for the transaction of business, but a vote of the majority of the Board is required for decision. On a controversial question a three-fourths vote of the Board shall be necessary to a decision. Any member of the Board may declare a question controversial. No decision shall be reached nor any order made against any railroad company with respect to any controversial question without notice and opportunity to be heard.

(e) The Board of Directors shall determine the policies and control the activities of the Association.

(f) If any road or group of roads, members of the Association, shall object to any decision of the Board of Directors, the road or group of roads so objecting shall have the right to submit the question or questions at issue to arbitration as hereinafter provided in Article 19.

ARTICLE 5. The Board of Directors shall appoint annually an Audit Committee of accounting officers, one of whom shall be Chairman, whose duty shall be to make a complete audit of the accounts of the Association at such time or times as it may be deemed proper, and shall make report annually to the Board of Directors.

ARTICLE 6. (a) There shall be an annual meeting of the members, and the Board of Directors shall designate the time and place thereof. At this meeting there shall be submitted a report of the activities of the Board of Directors during the preceding year, and there shall be elected a Board of Directors for the ensuing year. Special meetings of the members may be called by the Board of Directors at any time.

(b) Not less than 30 days prior to the annual meeting of the Members of the Association, the Eastern Presidents' Conference shall nominate five persons, the Western Association of Railway Executives five persons, and the Southeastern Presidents' Conference three persons, all of whom shall be chief executive officers of Member Roads, to be voted for at the annual meeting as Directors of the Association. Any member Road may make other nominations. Vacancies occurring during the year shall be filled by the Board for the unexpired term.

ARTICLE 7. (a) There shall be an Executive Committee, consisting of five members of the Board of Directors to be selected by the Board, and a sixth member who shall be the President of the Association and ex officio Chairman of the Executive Committee.

(b) The Executive Committee shall be considered as being continuously in session, and the members thereof shall give to the affairs of the Association such time as may be necessary.

(c) During the interval between meetings of the Board of Directors, the Executive Committee shall possess and may exercise all the powers of the Board, reporting its action to the next meeting of the Board for approval.

(d) The Executive Committee shall interest itself in matters affecting the railroad industry and shall recommend to the Board of Directors and to the Members such constructive policies as will promote efficiency and economical operation. Whenever requisite, it will accompany its recommendations with suggested rules and regulations to insure the execution of the determined policies.

ARTICLE 8. The officers of the Association shall be—

President;

Five Vice-Presidents, one of whom shall be the General Counsel;

Associate General Counsel; General Solicitor;

Secretary-Treasurer.

ARTICLE 9. (a) To the end that the business of the Association may be economically and efficiently conducted, and its service to the American railroads effectively performed, the Association establishes departments to be administered under executive supervision, as herewith set forth, to wit:

I. Law;
II. Operations and Maintenance;
III. Traffic;
IV. Finance, Accounting, Taxation and Valuation;
V. Planning and Research.

(b) Each of the Departments provided for in this article shall be under the direct supervision of a Vice-President of the Association. The Vice-President of the Law Department shall serve also as General Counsel. The work of the several Departments may be subdivided into such divisions as the Vice-President in charge may direct, with the approval of the President and the Board of Directors.

(c) Anything in this Plan to the contrary notwithstanding, the Board of Directors shall have power to transfer to any other department any activity herein assigned to a particular department.

ARTICLE 10. (a) The President shall exercise general supervision over the affairs of the Association and shall preside over meetings of the Board of Directors, the Executive Committee and the Members. He shall perform such other duties as shall be assigned to him by the Board of Directors. In the absence or disability of the President, a Vice-President of the Association, to be designated by the Executive Committee, shall discharge the duties of the President.

(b) The President shall have power to appoint such subordinates, assistants and clerical employes as may be necessary for proper conduct of the work of the Association; all subject to the approval of the Board of Directors. No bills shall be incurred without the approval of the President or a Vice-President.

ARTICLE 11. The Law Department shall deal with questions of legislation, governmental action and policies, and matters of a legal nature which, in the opinion of the Board of Directors or of the Executive Committee, will affect the members of the Association, and with such other matters of a related nature as may be referred to it by the President.

ARTICLE 12. The Operations and Maintenance Department shall deal with all matters pertaining to Operating, Car Service, Transportation, Equipment, Telephone and Telegraph, Signaling, Maintenance and Construction, Engineering, Mechanical, Purchases and Stores, Inspection, Freight Claims and such other matters of a related nature as may require attention or may be referred to it by the President.

ARTICLE 13. The Traffic Department shall deal with all matters of a traffic nature, both freight and passenger, and such other matters of a related nature as may require attention or may be referred to it by the President.

ARTICLE 14. The Finance, Accounting, Taxation and Valuation Department shall deal with all phases of Accounting, Financial and Taxation activities and such other matters of a related nature as may require attention or may be referred to it by the President.

ARTICLE 15. The Planning and Research Department shall absorb the work of the Bureau of Railway Economics and have charge of research problems affecting carriers, and shall provide properly digested information for other departments. It shall be the source of fundamental technical information and shall deal with all matters pertaining to the analysis and study of all phases of transportation operations, with special attention to improvements in present methods and practices, and research leading to the correlation of all forms of competitive transportation, pure and applied science, materials and construction, special statistics and reports, and with such other matters of a related nature as may require attention or may be referred to it by the President.

ARTICLE 16. In each of the Departments under the direction of the Department Vice-President there shall be appointed such Committees as may be deemed necessary for the subjects to be covered and the activity required upon these subjects. The members shall be selected from the various geographical sections of the country to insure adequate representation of the experience and practice of the Member Roads. They shall give such cooperative action to other committees as may be required.

ARTICLE 17. The Secretary-Treasurer shall be responsible for the funds of the Association, shall receive, disburse and account for all monies received and expended, shall make monthly reports of the finances to the Board, and shall give such bond as the Board of Directors may direct. He shall also keep a full and complete record of proceedings of all meetings of the Members, of the Board of Directors, and of the Executive Committee, and perform such other duties as may be assigned to him by the President or the Board of Directors. He shall deposit the funds of the Association in such bank or banks as may be designated by the Board of Directors.

ARTICLE 18. (a) Standards, rules, regulations and decisions of the Association shall be promulgated under the direction of the President, subject to the approval of the Executive Committee.

(b) Standards, rules and regulations may be established by the Member Roads by majority vote at any regular or called meeting or by letter ballot as the exigencies of the occasion may demand. The voting power of the Members of the Association shall be, in questions affecting physical property, proportionate to the ownership of equipment or miles of track, whichever may be applicable.

ARTICLE 19. (a) It is hereby declared to be the policy of the Association that all controversies between Members of the Association should be settled by arbitration, and the Members of the Association agree that, in any controversy over which the

Board of Directors has assumed jurisdiction and has decided by the affirmative vote of three-fourths or more of its members, they will accept and carry out such decision or, within twenty days, institute arbitration proceedings as hereinafter provided.

(b) Whenever it is necessary to arbitrate a controversy between the Board of Directors of the Association and a Member or group of Members, arbitrators shall be selected in the manner following: The Member or group of Members demanding arbitration shall select one or three arbitrators and shall notify the President of the Association of such action. Within twenty days after the receipt of such notice, the President of the Association shall select one or three arbitrators and shall notify the opposite party of such action. Within twenty days thereafter, the arbitrators shall meet and select one or three additional arbitrators. If, within the said period of twenty days, there shall be a failure by the previously selected arbitrators to select such additional arbitrator or arbitrators, the presiding Judge of the Federal Circuit Court of Appeals of the circuit which includes the home office of the member demanding arbitration (or the home office of the Member with the largest road-mileage demanding arbitration, if there be more than one Member party to the arbitration) shall be requested to appoint, within twenty days, the additional arbitrator or arbitrators.

(c) The Association shall adopt rules to be followed with respect to the admissibility of evidence, the filing of briefs, the hearing of argument and all other matters affecting practice and procedure.

(d) Within sixty days after a case has been submitted, the arbitrators shall render their decision and make their award, and such award, including an award involving the payment of money, shall be conclusive and binding upon the parties to the controversy. The decision and award of a majority shall constitute the decision and award of the arbitrators.

(e) The cost and expense of arbitration, as determined by the arbitrators, in each specific submission for arbitration, shall be borne in such proportions as shall be fixed by the arbitrators.

(f) Where there exist means for the settlement of disputes in organizations to be brought under the Association such rules and regulations may be continued, unless otherwise ordered by the Board of Directors or the Executive Committee.

ARTICLE 20. The expenses of the Association shall be met by assessments made by the Board of Directors and approved by the Member Roads based upon the operating revenues of the railroads members of the Association, the period selected to be determined by the Board of Directors.

ARTICLE 21. On all questions which come before the Members for decision the voting shall be in proportion to operating revenues, except as herein otherwise specifically provided.

ARTICLE 22. Attached, as Exhibit "A", is a form of Contract under which all Members will agree to the above provisions and which they will be required to enter into at the time of signifying their intent to become members of the Association; provided that Members in receivership or trusteeship may, if they so elect, execute a Contract in the form of Exhibit "B", hereto attached, in lieu of Exhibit "A".

ARTICLE 23. The principal office of the Association shall be in the City of Washington, D. C., but, subject to the approval of the Board of Directors, branch offices may be established in the cities of New York and Chicago, and elsewhere as required.

ARTICLE 24. This Plan shall become effective upon a date to be fixed by the Board of Directors after three-fourths of the mileage of the railroads now belonging to the American Railway Association and the Association of Railway Executives shall signify their assent thereto.

ARTICLE 25. The provisions of this Plan may be amended or modified at any time by a three-fourths vote of the membership, each Member casting its vote in proportion to operating revenues.

Mr. Pelley's Career

J. J. Pelley was born at Anna, Ill., on May 1, 1878. After graduating from the Anna high school, he attended the University of Illinois, where he was engaged in special work. He began his railway service as a station clerk for the Illinois Central at Anna in 1899 and continued with that road continuously for more than 20 years. He was a clerk at Carbondale, Ill., from 1900 to 1901 and in 1902 became track apprentice and assistant foreman of an extra track gang. He was appointed foreman and general foreman in 1903 and became supervisor of the Peoria district in 1904. In 1905 Mr. Pelley was transferred to the Memphis district and was assistant yardmaster at Clarksdale on the Memphis division during 1906 and 1907. His promotion to roadmaster came in 1908 when he was located at McComb, Miss., where he remained until 1910, when he went to New Orleans. In 1911 he was at Fulton, Ky., in the same capacity and while there was appointed superintendent, which position he held until 1915, when he was transferred to Memphis in the same capacity. In 1917 he was further promoted and became general superintendent of the southern lines of the Illinois Central, with headquarters at New Orleans, and in 1919, was transferred to the general superintendency of the northern lines.

Mr. Pelley withdrew temporarily from the service of the Illinois Central in 1920 to engage in work for the Car Service division of the American Railway Association at Chicago. In this connection he was appointed chairman of the Chicago Car Service Committee and manager of the Refrigerator Car Section of the Car Service division, in which capacity he served until April 1, 1923. On this latter date he returned to the service of the Illinois Central as general manager, a position which he held until November, 1924, when he became vice-president in charge of operation. On September 15, 1926, he was elected president of the Central of Georgia and in February, 1929, president of the New York, New Haven & Hartford, the position he now holds.

He has been a member of the board of directors of A. R. A. and of the advisory committee of the A. R. E. Last year he served as a member of the special "contact committee," including C. R. Gray and F. E. Williamson, that conferred with President Roosevelt, Commissioner Eastman, and others regarding the development of the bill which became the emergency transportation act of 1933.

R. H. Aishton Retires

Formation of the new association marks the retirement of Richard H. Aishton, chairman of the Association of Railway Executives and chairman of the board of the American Railway Association, after 15 years of continuous service with the American Railway Association and its predecessor, the American Railroad Association, which took its place during the period of federal control, although it is understood that some plan may be arranged to retain his services in an advisory capacity. A committee was appointed to draft a resolution expressing appreciation of his long and valuable services to the American railroads. Mr. Aishton, who is now 74, has long sought to be relieved of active duty and on April 1, 1933, he tendered his resignation as president of the A. R. A. but was elected to the new position of chairman of the board, while M. J. Gormley was elected president. He had been chairman of the executive committee of the Association of Railway Executives since 1924. He had become president of the American Railway Association in 1920, after his retirement from active railroad management, as the first to hold that position who was not an officer of an individual railroad. Prior to that time the office of president of the A. R. A. had held for a year at a time by one of the railroad executives who retained his office on the individual road. In 1929 he also became general chairman of the Presidents' Conference Committee on Federal Valuation of Railroads.

In all these positions of great responsibility Mr. Aishton's personality, as well as his great experience and ability as an operating officer have been combined to create a quality of inspirational leadership which has had its effect on widespread activities of the railroads. In 1932 the American Museum of Safety presented to

him a certificate of special commendation in recognition of more than fifty years of active and co-operative participation in the promotion of railway operating safety, including in its citation: "In a fashion peculiarly and forcefully his own, he has served as the general directing the forces battling on all fronts to make rail transportation safe for passengers and employees."

Richard Henry Aishton was born at Evanston, Ill., on June 2, 1860. He was educated in the public schools of Evanston and entered railway service in 1878 as axman in the engineering corps of the Chicago & North Western. He subsequently served with the same road as rodman, levelman, assistant engineer, superintendent of bridges and buildings, and division engineer. In 1895 Mr. Aishton was appointed assistant superintendent and two years later he became division superintendent. He was advanced to the position of general superintendent in 1899 and in 1902 he was promoted to assistant general manager, being further advanced to the position of general manager in 1906. In 1910 he was appointed vice-president in charge of operation and maintenance, serving in that capacity until 1916, when he became president of the road. In 1918 when the government took over the operation of the railroads he became regional director for the Western region and after its subdivision into three regions he became regional director of the Northwestern region. In 1919 when the American Railway Association was reorganized by the Railroad Administration he was made president and when the association was again reorganized he was asked to become its chief executive in a salaried position.

Joseph B. Eastman, federal co-ordinator of transportation, in a statement regarding the association, said:

"The announcement that the railroad executives of the country have agreed upon one national railroad authority to deal effectively with all matters of national interest to the railroads of the United States is gratifying. I believe that it is a step in the right direction which offers promise of substantial benefit to the railroads and also to the country. For a long time the need for a better central organization of the industry which could act authoritatively, somewhat in the capacity of a general staff, has been evident. While the railroads are owned by many separate and independent companies, they really operate today as parts of a national railroad system, for cars are freely interchanged and move all over the country, through routes and joint rates abound, and joint operations are now, on the whole, of more importance than local operations. Because of this situation, there are many matters of common concern to all of the railroads and to the industry as a whole which emphatically require central leadership and should be governed by common policies.

"Existing central organizations have done good work in many respects, but the bonds of union have been so loose that needed collective action has been hampered and the individual companies have often worked at cross purposes with each other. The fact that the railroad executives have now recognized this weakness in their situation and are endeavoring to correct it augurs well for the future of the industry. The railroads have been, are, and will continue to be essential to the welfare of the nation, and under proper stimulus and guidance I believe that there are large opportunities for the development and improvement of service and operation and for co-ordination with other forms of transport which will benefit shippers, travelers, labor, investors, and the entire country. The new organization is consistent with the work which I have been endeavoring to do under the Emergency Railroad Transportation Act, 1933.

"The new central organization is, of course, not a complete answer to the entire transportation problem, but it should supply one part of the answer. My understanding, I should add, is that it will not disturb in any way the safeguards which have been set up through law for the protection of those who use the railroads and of the general public interest. Its operations will be subject in all respects to those safeguards."

Jesse H. Jones, chairman of the Reconstruction Finance Corporation, also issued a statement, apparently without having read what Mr. Eastman had said about the safeguards which have been set up by law, saying that "the new association of railroads is certainly a step in the right direction and much good should come of it. Railroad executives are aroused to the necessity of some radical changes for their common good and I congratulate them for so earnestly undertaking the job. However, I believe the public would be better served and satisfied if, in addition to the 13 railroad executives—excellent gentlemen that they are—who comprise the directors of this new association, there was included representation for the public and the government, to be named by the President of the United States."

Mr. Jones issued his statement at a press conference in which he spoke as if he had the impression that the new association was going to consolidate the railroads. He referred to the consolidation provisions of the transportation act of 1920 and said "all this time we have had no consolidations to speak of. Why?" Later he said he had not seen the by-laws of the association and did not know that it had any authority to make consolidations but that he understood that it was formed to eliminate waste and he thought it could bring about co-ordination and pooling. He also pointed out that after next January the R. F. C. would have no further authority to make loans to railroads. In reply to a question he said that the amount of the government's loans to the railroads was not sufficiently large to justify the exercise of any authority over the railroads on that ground and that he did not expect many additional loans to railroads before the end of the year. He said his statement might be a little far-reaching and that it was "rather a hurried thought on the subject."

* * *

The Delaware & Hudson's "Laurentian," Northbound at Mechanicville, N. Y., Over a Stretch of Track in Which the Rails Have Been Made Continuous for Approximately 2,000 Ft. by Welding All Joints

Steam Locomotive for Light, High-Speed Passenger Trains

A proposed straightforward combination of established basic features with important innovations in detail development

By W. E. Woodard
Vice-President, Lima Locomotive Works, Inc.

THE marked trend in rail passenger transportation toward high-speed, light-weight trains is a most significant step in placing the rails in an advantageous position to compete with other forms of transportation of passengers. Not only does this apply to internal combustion driven units comprising a few cars, but also to the use of lighter types of coaches suitable for regular train operation.

Several roads are now building or securing such equipment and it is almost self-evident that the reduced weight of trains, together with the higher speeds of operation desired, requires a new development in the motive power to secure the best operating results. The Lima Locomotive Works has made a survey of the locomotive requirements for such service and this article presents the results of our studies in the form of a recommended design.

The general proportion as well as the selection of certain features of construction were determined by what we conceive to be the basic requirements for a successful design for this class of service. These requirements are safety of operation; total weight of engine and tender as light as consistent with good design; rapid acceleration combined with smooth running at speed; high ratio of availability combined with minimum maintenance cost, and high sustained power output combined with favorable fuel performance.

General Specifications

Capacity.—Cylinder and boiler proportioned for sustained horsepower output of 2,200 at all operating speeds over 30 m.p.h. At a conservative estimate this will pull a train of 250 tons at a sustained speed of 90 m.p.h. on straight, level track.

Boiler Material.—Nickel steel.

Frames, Including Trailer Extension.—High-tensile steel cut from integral rolled and forged slabs, normalized and tempered.

Valves and Valve Gear.—Poppet type capable of operation to 10 per cent cut-off.

Reciprocating Rotating Parts and Counterbalance.—Reciprocating, and rotating parts in a straight line with cross centers of cylinders (79-in. cross centers) giving best possible conditions of counterbalance. Locomotive balanced for safe operating speed of 100 m.p.h.

General Appearance and Reduction of Air Resistance.—General design prepared for securing as much advantage of streamlining as is consistent with accessibility of parts for inspection and maintenance.

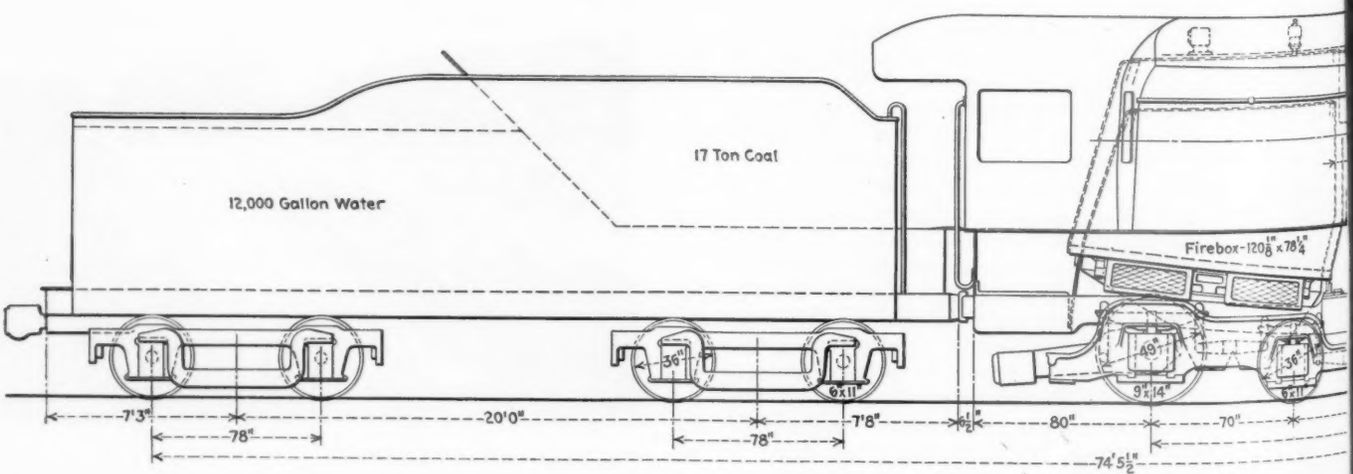
Air Preheater.—Automatic type applied to the air openings of the ashpan.

Tender and Tender Frame.—Low center of gravity, tender frame formed of bottom plates of tank cistern and center sill, welded construction.

Tank.—Sides and back sheets of high-tensile, corrosion-resisting steel, of dished-panel construction. Bottom of water cistern pocketed to clear tender-truck wheels.

Tender Trucks.—Equalizer type of high-tensile steel plate, welded construction.

The diagram, together with general specifications, forms a concise picture of the main features of the locomotive we recommend for the class of service under discussion. The proportions of design as well as the selection of certain features of construction were gov-



A 4-4-4 High-Speed Locomotive Desig

erned by the basic requirements outlined above, due consideration being given to various elements, such as safety, maintenance, fuel economy and weight.

The following comments upon the general design as well as specific details will indicate the reasons underlying the choice of the proportions, types of constructions and material employed.

High-Speed Characteristics

This item involves a discussion of several elements of the design. Four coupled drivers with the main rod connected to the first pair (allowing 79-in. cylinder cross centers) produces an arrangement giving the smoothest possible running characteristics.* The main and side rods are in one line viewed vertically (Tandem type) and hence all reciprocating and rotating parts are as close as possible to the plane of the counterweights in the driving wheels. Light reciprocating parts (21½-in. cylinder diameter) taken together with the straight-line drive results in a most favorable counterbalance condition. The poppet valves are arranged with compression and release events timed independently of the admission and cut-off events, thus permitting the steam distribution in the cylinders best suited for high-speed operation. The 84-in. driving wheels and 26-in. stroke permits high locomotive speed without abnormally high piston speeds. Taken together, all the elements combine to produce the most favorable arrangement for high-speed running.

Weight on Drivers and Tractive Force

The weight on drivers is 65,000 lb. per pair of wheels. This figure may be readily adjusted up or down a few thousand pounds to meet specific requirements, as the general construction permits ready transfer of weight from the trucks to the drivers, or vice versa. The booster is used for smooth starting and quick acceleration; it is proposed to use the booster up to 18 or 20 m.p.h.

Boiler

The boiler and firebox proportions are ample for the steam requirements of the cylinders, with the result that the grate will be worked at a low and economical combustion rate. At a coal rate of 88 lb. per sq. ft. of grate per hour the boiler will evaporate about 43,000 lb. of steam at 275 lb. pressure, which is ample for the maximum cylinder demands, plus the auxiliaries and heating. The working pressure of 275 lb. per sq. in. was chosen as the most satisfactory figure, taking into consideration steam economy, maintenance of boiler and the desirability of a staybolt firebox construction on account of washout conditions.

Weight considerations determined the use of nickel steel in the shell sheets of the boiler. A feedwater heater is used.

Cylinders

Reference has already been made to the poppet-vale construction. Poppet valves result in small cylinder clearances. This factor, together with the very short cut-offs which are used and advantageous steam distribution, makes a substantial saving in steam per horsepower and thus reduces the demands upon the boiler.

Frame Construction

The main frames are formed from a single slab of high-tensile steel, normalized and tempered. The material used gives a minimum elastic limit of 55,000 lb. per sq. in. After the cutting operation, normalizing and tempering, all surfaces of the frames are machined. This provides not only a simple, light-weight construction, with ample bolting surfaces for the cylinder connections, but also one with a very high factor of safety as the main frames from the front bumper to the end of the trailer are formed and cut from a solid rolled and pressed slab of high-tensile steel.

Principal Dimensions and Data for the Proposed 4-4-4 High-Speed Locomotive

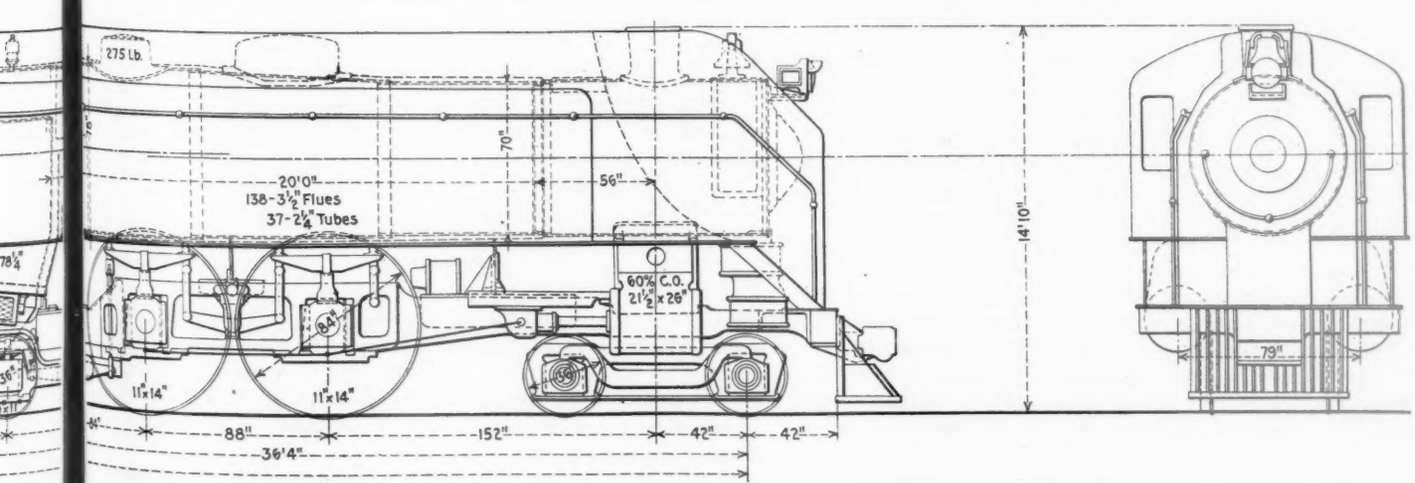
Cylinders	21½ in. by 26 in.
Maximum cut-off	60 per cent
Boiler pressure	275 lb.
Driving-wheel diameter	84 in.
Grate area	65.2 sq. ft.
Total heating surface	3,200 sq. ft.
Tractive force, main cylinders	30,500 lb.
Tractive force, with booster	43,100 lb.
Total wheel base	74 ft. 5½ in.
Weight on driving wheels	130,000 lb.
Total engine weight	300,000 lb.
Tank capacity, fuel	17 tons
Tank capacity, water	12,000 gal.
Weight of tender, loaded	213,000 lb.

Air Preheater

An automatic air preheater is applied in the ashpan air opening. This heater has been under service trials for a number of months, the tests showing marked fuel savings and reduction of boiler maintenance.

The heater is so arranged that when the locomotive is operating exhaust steam is led to bundles of fin tubing placed in the air openings of the ashpan, thus raising

* We are apt to forget that this was one of the great virtues of the old eight-wheeler.—Author.



a Sustained Output of 2,200 Hp.

the temperature of the air of combustion. When the locomotive throttle is closed live steam (at reduced pressure) is automatically turned into the heater, thus maintaining at all times uniform air temperature under the grates. The reduction in staybolt and side-sheet maintenance promises to be quite as important as the fuel saving. The tests have shown that no reduction in nozzle is required when the air preheater is applied, nor does it interfere with the supply of exhaust steam to the feed-water heater.

Reduction of Air Resistance

As indicated in the outline drawing of the locomotive streamlining has been utilized to as great an extent as possible without seriously interfering with the accessibility of vital parts. Smoke lifters, based upon the designs used extensively abroad, are merged into a hood extending from the stack to the cab and covering dome, sand box, safety valves and turret. This hood at the rear end merges into the front of the cab structure. Published results of aerodynamic tests of models indicate an appreciable reduction in air resistance by the use of this construction. The low running boards cover a portion of the machinery without, however, obstructing inspection and maintenance.

Model Showing the Type of Construction Employed in the Tender-Truck Frame

Tender

The entire tender structure has been designed with the view of securing the maximum fuel and water-carrying capacity per pound of empty tender weight. The ratio of pounds of fuel and water carried to light tender weight is 1.7; i. e., there is 1.7 lb. of fuel and water for each pound of tender. This is about 25 per cent higher than tenders of equal capacity and of the usual construction equipped with equalized tender trucks, which have an average ratio of about 1.35 lb. of fuel and water to one pound of light tender. The weight saving results from the use of the construction indicated in the general specification. The tender-truck construction—i. e., high-tensile-steel plate, welded—is the result of studies to secure a truck of light weight but of rigid integral construction. The illustration of a working scale model, made for the purpose of stress studies and to develop the best weld locations, gives an idea of the construction. An important factor in securing weight reduction in the tender is the use of thin, high-tensile corrosion-resisting steel side and back plates which are reinforced against deformation by pressing dished panels in the sheets.

The entire design of locomotives and tender has been studied with a view to producing a machine following the latest accepted practice, but adding still further improvements where such features will reduce cost of operation and maintenance without adding unduly to the initial cost, always bearing in mind the element of safety of operation. This, we believe, rather than adventures into fields of complicated and unproved construction, is the direction which the locomotive is now taking.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended September 15 totalled 645,986 cars, an increase of 83,256 cars as compared with the week before, which included the Labor Day holiday, but a decrease of 14,100 cars as compared with the corresponding week of last year. This was, however, an increase of 58,740 cars as compared with 1932. Loading of miscellaneous freight, and grain and grain products showed increases both as compared with the week before and the corresponding week of last year. Livestock also showed an increase over last year's figures. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended Saturday, September 15, 1934

District	1934	1933	1932
Eastern	134,745	144,329	129,217
Allegheny	114,181	129,264	106,323
Pocahontas	44,147	47,673	40,832
Southern	87,321	87,039	88,078
Northwestern	100,462	99,601	74,168
Central Western	105,754	98,003	94,163
Southwestern	59,376	54,177	54,465
Total Western Districts	265,592	251,781	222,796
Total All Roads	645,986	660,086	587,246
Commodities			
Grain and Grain Products	37,765	31,554	35,890
Live Stock	35,168	20,070	21,706
Coal	117,050	126,555	106,792
Coke	5,253	6,652	3,472
Forest Products	22,606	25,637	18,050
Ore	25,604	42,907	6,558
Merchandise, L.C.L.	163,916	172,784	176,948
Miscellaneous	238,624	233,927	217,830
September 15	645,986	660,086	587,246
September 8	562,730	577,933	501,537
September 1	645,780	673,778	561,325
August 25	605,516	637,510	537,767
August 18	600,564	643,406	518,440
Cumulative Total, 37 Weeks	22,021,032	20,285,628	19,755,430

The freight car surplus for the last half of August averaged 359,330 cars, an increase of 6,874 cars as compared with the number in the first half of the month. The total included 209,145 box cars, 118,618 coal cars, 6,660 stock cars, and 11,890 refrigerator cars.

Car Loading in Canada

Car loadings in Canada for the week ended September 15 totaled 53,564, an increase of 5,885 cars over the previous week, and of 5,930 over the same week last year, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
September 15, 1934	53,564	19,923
September 8, 1934	47,679	17,461
September 1, 1934	52,888	19,983
September 16, 1933	47,634	20,611
Cumulative Totals for Canada:		
September 15, 1934	1,596,939	810,167
September 16, 1933	1,352,806	674,989
September 17, 1932	1,523,146	704,419

INTENSIFIED EFFORTS are being made by French railroads to effect economies in operation and reduce the rising deficit, according to a report received recently by the U. S. Commerce Department. During the current year these efforts have resulted in reducing expenses of the roads approximately 300 million francs. Steps have also been taken to improve the service and reduce the running time between the more important stations by the increased use of motorized equipment.

Ramifications of Railway Supply Work

Constant study of materials discloses opportunities for reducing costs and improving quality

Interior View of a Railroad Laboratory

HAND in hand with the technical departments of the railroads and with the manufacturers, the supply forces of the railroads are playing an increasingly important role in the technical advance of transportation. By relieving construction and maintenance forces of the multiplicity of detail connected with the acquisition and distribution of materials, purchasing and stores organizations give those forces more opportunity to develop the materials used in the railway business. By devoting specialized attention day by day to the cost and consumption of material, they have stimulated research directed to the elimination of waste and weakness in materials. Improvements in the quality of fuel, ties, and hundreds of materials and devices used on railroads are the result of the interest and co-operation of such organizations; manufacturers advertise the use of their products by railroads because of the scientific manner with which the selection of railway materials is made.

It is essential to the complete understanding of the research work on railroads and the part that purchasing methods have in it to recognize that the railroads are built from end to end and from top to bottom, except for the right of way, with materials and equipment provided at some stage by American industry. They are also operated, maintained and improved with those materials. These materials and products, moreover, entail, in every instance, the expenditure of money—money with which to purchase them, money with which to apply them, to maintain and finally to replace them.

The variety of material composing the railway plant is such that the average railroad regularly carries over 50,000 different kinds and sizes of articles in stock with which to maintain the plant, while another 10,000 different kinds and sizes of articles are added to meet special requirements. Because of the far-flung character of railway operations, quantities of these materials must be carried at several points along the railroad.

Wide Changes in Material

It is indicative both of the constant development of railroads and the supply problems that these materials do not remain the same from year to year but are constantly undergoing changes, with changes in manufacturing practices, changes in railway practice and advances in the progress of transportation. The places to see these changes are in the storehouses. Supplies for such equipment as automobiles, rail motor cars, etc., which were unknown to railway stock a few years ago, are now common. Wide-spread changes, moreover, have occurred in the sources of supply from which railway materials are obtained.

Supply Work More Extensive

By undertaking to keep watch of these changes and to handle the details connected with the purchasing, storing, distribution and management of all materials before and after use, the purchasing and stores organizations have become powerful arms of research work. In contrast with the situation 20 or 30 years ago when supply work was relatively unorganized and undeveloped, these organizations are now more thoroughly articulated and permitted to interest themselves in almost every problem where material is involved. Aside from participating in the purchasing of fuel, such organizations, in many instances, exercise control over the stores of every description, including supplies once in charge of division superintendents, master carpenters and shop foremen. They direct the inspection of ties and lumber and, in some cases, also the operation of railway testing laboratories. Besides keeping stock and ordering materials for general use, such organizations deliver material direct to place of application, including the distribution of rail and ties to line of road, and maintain and operate fleets of automotive equipment with which they perform transportation work of all kinds. They have developed and operate plants for the recovery and reclamation of discarded materials; also sawmills, wood-planning mills and plants for the preservation of ties and timbers. These operations represent or involve research problems in every instance.

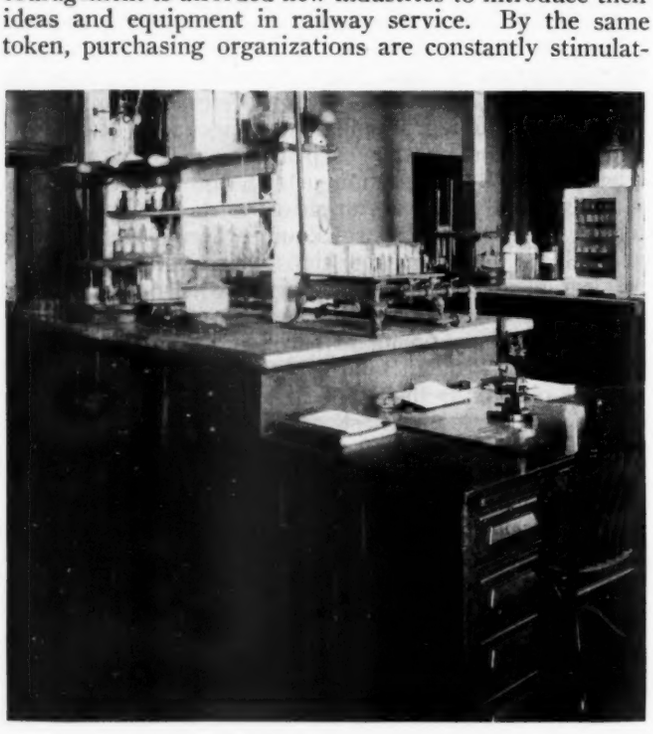
One of the most effective ways in which these organizations contribute to the technical progress arises from their continual contact with sources of supply. Even with the drastic curtailments of purchases, the average purchasing department receives from 60 to 100 or more visitors a week. Often the visitors reach that number daily. During these visits, the practices on railroads, manufacturing developments and trade conditions are constantly under discussion, and the supply organization learns of the aspirations, difficulties and viewpoints met

A Bird's-Eye View of What Railroads Buy—All Involving Research

on subjects, technical and otherwise, involving the use of materials by railroads. New sources of supply, new inventions and other improved methods are discovered and the information passed on to the engineering and mechanical forces for study and trial, or made the subject of technical study by the supply organization itself.

Purchasing Methods Stimulate Research

The interests of supply organizations in purchasing equipment and materials at the lowest cost consistent with quality and service, instead of obstructing research, often prove a stimulant to it. In this respect, a railroad is no differently situated than any other industry. Quality and service must be secured but not without regard to the cost. By constantly stressing the cost in purchasing, supply organizations of railroads have encouraged manufacturers to utilize their research facilities, to develop new and improved methods directed either to reduce the purchase price or increase the service life or earning power of material. In the same way, encouragement is afforded new industries to introduce their ideas and equipment in railway service. By the same token, purchasing organizations are constantly stimulating the technical forces of the railroads to study the materials and equipment already in use for the purpose of either proving its superiority to other materials or the desirability of adopting something better. In these investigations, the technical forces of the supply organizations are equally diligent. A day never goes by when the scientific resources of manufacturing plants and railroads are not engaged with research work begun in this manner.



Putting Supplies to the Acid Test Is Routine on Many Railroads

Improvements in the quality of coal have been caused by such investigations. In a similar way, supply organizations have encouraged the introduction of fuel economizers. In some territories, facilities have been built and locomotives equipped to use fuel oil instead of coal, largely because of the study given by purchasing organizations to the comparative costs of fuel and oil. In the same manner, purchasing organizations have contributed much to the great advance made in the treatment of timber and, correspondingly, to the improvement now being made in the character of treatment. At present, one purchasing organization is experimenting with entirely new applications, which, if proved satisfactory, will save the railroad $150,000 per year in treating costs alone. Largely at the instance of purchasing organizations and as a result of studies within these organizations, radical changes have been made in the grades and species of lumber used for particular applications, and the same is true of ties. The increased use of welding is an example of improvements on railroads which have been greatly encouraged and, in some places, introduced by the interest and study of purchasing organizations.

Specifications Developed

Most of the equipment and materials used by railroads is purchased to specification. Most of these specifications reflect extensive investigations involving scientific studies and both laboratory and service tests. These specifications are designed to establish the standard of quality required of the material and are intended to govern both the manufacturer and the purchaser. Frequently, the preparation of these specifications or their revision starts with the supply organization as a means of stimulating competition where none existed before, and supply-department representatives are now parties to most specifications prepared. As a result, specifications reflect both the supply organization's practical and technical knowledge of various factors to be considered in connection with material handling and manufacture, assuring the railroad a satisfactory product and the full

advantage of the research activities of manufacturers and saving the extra costs of special manufacturing effort.

Research for Quality

Sharing the responsibility of securing high-grade materials for the railroads, the supply organizations are not only on guard against inferior products, but have participated in the research work conducted to improve quality. Trained inspection forces employed or directed by purchasing organizations are constantly being subjected to tests and analysis in railroad laboratories. As much as 50 per cent of the work of some railroad laboratories is performed for the purchasing organizations in connection with the inspection of materials. A month never goes by when these organizations do not protect the railroads from serious mistakes in manufacturing or otherwise contribute to the study and betterment of railway equipment.

In a typical month in the recent past, the inspection forces of one road rejected 900 brake shoes and 2,000 steel castings of various kinds because of defects in manufacture. Other rejections included 7,500 engine bolts, 13 arch tubes, 19 lengths of corrugated pipe and 7 water gage glasses, any one of which could have caused a serious accident by failure in service. The rejections also included approximatley 1,200 journal brasses, 18 drawbar yokes, 150 boiler tubes, 1,700 side frames, 61 tool handles, 450 cast-iron wheels, 700 rivets, 170 steel couplers, 400 steam hose, 1,800 tie plates, 425 air-brake cylinders, 295 kegs of track spikes, 95 steel axles, 165 truck bolsters, 8 crank pins, 14 steel tires, etc. Frequently these inspections require scientific investigations which result in the development of entirely new materials or wide-spread changes in manufacturing processes, all of which react to the ultimate advantage of the railroad.

Better Stock Control Aids Research

The supply organizations have also facilitated the study of materials by the system which has been thrown around the care, distribution and control of material in the past 10 years. Not many years ago, it was common to see new materials for railway use scattered over the railroad, stored in dark places, mixed with old materials and poorly identified. By systematic work by supply organizations, the railroads are now equipped with storehouses and material yards in which virtually every piece of unapplied material is neatly stored and correctly identified so that those who use material, as well as those who handle it, can determine, without delay or trouble, the kind and condition of material available for use, and appreciate its bearing upon the cost of railway operations. This study has been further facilitated by arrangements on most roads whereby all orders for material must originate with the stores where they can be carefully checked as to descriptions, as well as to quantities, and the study of materials has been still further enlarged upon by practices developed, under which each user of material is notified of the cost of the material used. These improvements in stores practice, aside from affording better control of the stock and promoting conservation in the use of materials, are constantly promoting studies by the supply forces and, by the users of materials, directed to improving the quality of materials, extending the use of certain articles or reducing their cost.

Consumption Records Invaluable

The system of stock records used by supply organizations has also contributed to technical progress and will become a larger factor as its possibilities are more thoroughly understood. The least complete records provide full descriptions of every item of material standard to stock and corresponding records show the quantity of each item in stock and the rate of consumption, while the records of some storehouses go so far as to show the consumption over long periods and also the surplus and obsolete items. Many roads keep a master stock book at headquarters in which the record of stock at each storehouse can be seen at a glance. It is a simple matter, with these comparative records of consumption over stated periods at one or more points, to discover waste in the use of material or to discover evidence of excessive wear or breakage; it is nothing for the average storekeeper to report five or six instances of this daily for investigation, while a day seldom goes by on most roads when engineering and mechanical forces do not examine the books in connection with their research work.

Material Studies Eliminate Waste

One of the most profitable lines of research associated with supply work has been the simplification of stocks. There is a limit beyond which such activities cannot be carried without proving costly, but within these limits, the work is a source of great economy to the railroads by reducing the stock of material required, reducing the risk of stock depletion, promoting interchangeability and by affording more economical purchasing. While some of the work involves simply the elimination of unnecessary sizes, in other cases it leads to changes in design or the development of new materials. By alterations in design, one road reduced the release rods for cars from 271 different sizes to 10, and 36 different kinds of brake staffs to 16. A 50-per cent reduction in tie sizes is representative of the results on another road. By similar studies, one road eliminated 24 sizes of copper tubing, 93 sizes of steel tubing and 1,289 kinds and items of fabricated steel from its stock. The reduction in the number of items of steel and iron bars, plates, sheets and shapes by another road was 59 per cent. By simplification studies directed by the supply organizations of one road with the co-operation of the technical departments, 19,000 different items of material were eliminated from the standard stock. So important has this type of research been to the railroads that it has been made the subject of national committees and has been continued from year to year for the purpose of promoting the use of commercial standards of material interchangeable between roads.

Shop Practices Receive Study

Study, involving technical research, has also been directed by supply organizations to the recovery and repair of worn or discarded materials in an effort to prevent the destruction of any material that has any salvage value. Facilities justified by these studies are equipped with machines, lathes, electrically-controlled furnaces and a wide variety of machine tools, together with testing apparatus to insure satisfactory results. This work not only includes the extensive repair of items of steel, but the recovery and conditioning of journal packing, crank-case oil, lumber, etc. Some supply organizations even perform mill work for building construction, and the experimentation by laboratory or service tests is constantly going on. In addition to this, the supply organizations have also directed much study of material, as well as market conditions, to preparing railroad scrap by cutting and sorting in such a way as to secure a ready market and better prices. The importance of this work is apparent when it is considered that in

normal times the railroads derive from $25,000,000 to $35,000,000 annually from the sale of such materials.

Modernized Material Handling—A Research Problem

A few years ago, nearly all the handling of material at shops and stores was accomplished by hand truck, push car or by switch engine. At the present time, chiefly as the result of study by supply organizations, this work is performed almost entirely by tractors, lift trucks and automobiles, which are operated under a co-ordinated plan of shop transportation, and which not only deliver materials from storehouse to shops, car yard, etc., but undertake to handle material throughout the shop and to perform a centralized service for all departments in terminal areas. This work has been carried to the point where much material is now received from manufacturers on portable platforms which are moved bodily from car platforms or from platform to car and shipped in this manner to destination without requiring the rehandling of the material. The supply departments point to this revolutionary change in material handling methods of railroads and the striking economies produced as one of the major contributions their studies have made to railroad progress. It has reduced railway handling expense 20 per cent.

Railroads Urged to Protect Coal Traffic

THE time has come, in the opinion of Carroll B. Huntress, executive secretary of the National Coal Association, when the railroads and the coal industry must co-operate in a determined effort to resist the growth of competitive fuels and especially the programs of the government for hydro-electric power projects. In an address before the International Railway Fuel Association of Chicago on September 17, in which the railroads did not escape criticism, the spokesman of the industry from which the railroads are said to obtain 20 per cent of their revenues declared that the displacement of coal by competitive sources of energy is increasing at an alarming rate and that disastrous consequences face the railroads as well as the coal business unless defensive steps are taken and "socialistic" schemes of government officials are stopped.

A program behind which the railroads and the coal industry should throw every reserve at their command is the retention of markets for coal against oil, gas and hydro-electric power, said Mr. Huntress. The railroads make money on every ton of coal hauled, although much tonnage is mined at a loss even under the codes. Displacement of coal by competitive sources of energy is increasing at an alarming rate and the time has passed for timid discussion of the subject, he said. Referring to the attitude of the railroads, he pointed out that several years ago the railroads rejected a request by the national organization of coal operators to co-operate with the coal industry to promote the use of coal, the reason being that some members of the railway association hauled oil and other railroads had interlocking financial relationships with those roads.

Hydro-Electric Projects

The railroads, however, have not seen anything in the way of losses comparable to those which will result if the present hydro-electric power program of the government goes through, he argued. The railroads were loath to protest in the case of a Nebraska project when a certain railroad faced a loss of 200,000 tons of coal. They would not join the coal industry in that protest because an irrigation scheme was embraced in the program and the railroad concluded that the gains from the irrigation project would more than offset the loss in coal traffic. The railroads are taxed to death and yet sit by and see this hydro-electric program proceed, tax free. What is this program going to do to the investors in the roads? he asked. It is out of their money that these projects are being built and it is out of their money that the cost of operating them will be paid. Tens of thousands of coal miners and railroad workers and scores and hundreds of mining communities will be wrecked and the men thrown out of jobs if this program is carried out, he maintained. That the coal industry and market would be seriously impaired, he said, is acknowledged by Secretary Ickes of the Department of the Interior.

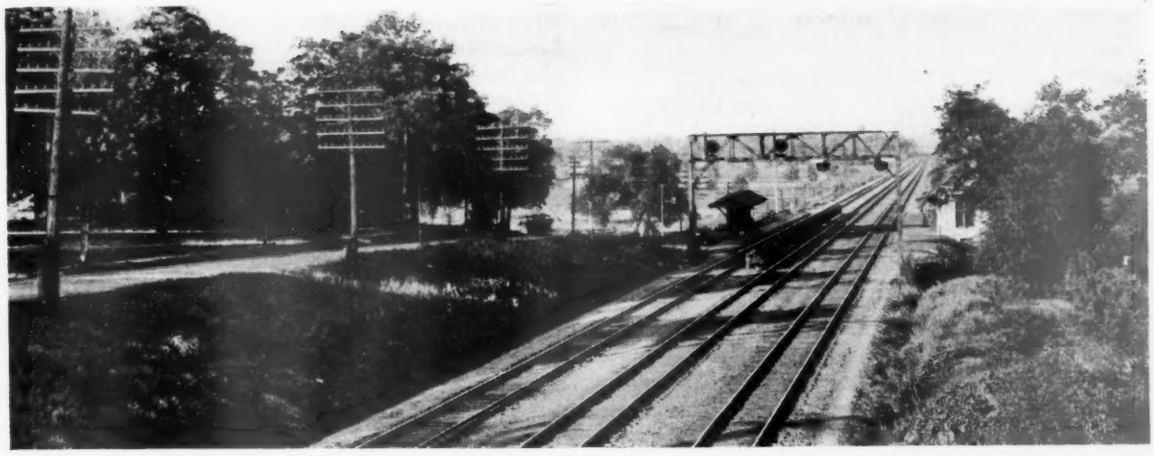
Action Urged

The best investment that could be made by the railroads and the coal industry, Mr. Huntress, contended, would be the accumulation of a fund of a million dollars to beat back the program because it destroys the jobs of miners and railroad men. I long, he added, for the coming of the time when the mutuality of interests between the railroads as a transportation industry and the bituminous coal mining industry shall not be confined to discussions when associations meet, but shall be the subject of action by boards of directors.

Speaking further on the opportunities for co-operation between the railroads and the coal industry, Mr. Huntress suggested that, while the railroads have co-operated in the use of surplus sizes, that co-operation should be broader. There are many times, he said, when the demand for certain sizes of coal is in excess of that for the component sizes and the operators must have relief from the railroads to move the coal. The movement of a car of "distress" coal usually means the movement of a car of revenue freight. Referring to complaints that the railroads do not get the efficiency out of the small sizes of coal, he contended that the modern locomotive is designed for those sizes and the extra revenue obtained by permitting the movement of the car of commercial freight will more than compensate for any loss in fuel economy. The railroads, he conceded, have made a wonderful fuel record by reducing the consumption of coal per 1,000 gross ton-miles of freight from 170 lb. in 1920 to 123 lb. in 1932. But, he added, when seasonal demands appear, the maintenance of such a record can result in pinching the pennies to save the pounds.

Another problem of the coal industry is the need of through rates. He said that the coal industry could warehouse its coal at places of large consumer demand if it had through rates and he predicted that the coal industry will press the subject throughout the year. Some railroads, he aded, have different freight rates for different sizes, and the coal industry urges more universal application of that rule in order to help the coal man hold his market.

MORE THAN 275 TRAINS, including many commutation trains to and from Boston, Mass., will be speeded up when the Boston & Maine's new timetable becomes effective on September 30. Under the new schedules the running time of commutation trains will be reduced by one to eleven minutes. Also, the Flying Yankee, operating non-stop between Boston and Portland, Me., will make this 115-mile run in 2 hrs. 5 min., or at a rate of 55 m.p.h.—4 m.p.h. faster than at present. Many other long-distance trains will also be speeded up.



Roadmasters Hold First Convention in Four Years

Attendance and interest at meeting in Chicago were higher than in any previous year except 1929

A REGISTRATION of 309 railway men, a greater number than in any previous year except 1929, evidenced the interest in the forty-ninth convention of the Roadmasters' and Maintenance of Way Association at the Stevens hotel, Chicago, on September 18-20. Although this was the first convention which this organization has held in four years, evidence of renewed enthusiasm was by no means confined to numbers. It was manifested also in the sustained attention accorded the addresses and committee reports presented at the five sessions of the convention, and by the interest manifested in the exhibit of track materials and appliances placed on display by the Track Supply Association.

In his address to the convention at the opening session, President Elmer T. Howson, western editor of the *Railway Age*, recalled the circumstances attending the suspension of the association's activities, following its last previous convention in September, 1930. Plans for conventions in 1931, 1932 and 1933 were abandoned in succession, he said, at the specific request of the railway executives in recognition of the trying circumstances confronting the railroads during those years. This year, the association met with the specific approval of the railway executives. The finances of the roadmasters, he said, were in excellent condition, it having been possible for the officers to carry on the affairs of the organization during the period of inactivity with a reduction in assets of only $1,200, in spite of the fact that no dues were collected from the members in three successive years. Funds on hand, according to a joint report of the secretary and treasurer, in the amount of nearly $4,000, leaves the association in a sound financial condition to continue its work.

A Comprehensive Program

The program covered nearly every phase of the duties of officers in charge of track maintenance. Committees composed of members of the association presented reports on Spot Versus Group Renewal of Crossties; Roadbed Embankment Maintenance; Methods of Cleaning Stone Ballast; the Conservation of Rail; and Highway Crossing Construction. In addition, papers were presented by J. E. Long, superintendent of safety, Delaware & Hudson, and president of the National Safety Council, on The Next Goal in Safety; by A. N. Reece, chief engineer of the Kansas City Southern, on Building a Maintenance Organization; by Earl Stimson, chief engineer maintenance, Baltimore & Ohio, on Meeting Present Day Roadway Requirements; and by Robert Faries, assistant chief engineer-maintenance of the Pennsylvania, on The Extent to Which a Railway is Warranted in Making Capital Expenditures for Permanent Track Construction to Effect Economies in Repair and Maintenance.

Election of Officers

In the election of officers C. W. Baldridge, assistant engineer, Atchison, Topeka & Santa Fe, Chicago, was advanced from first vice-president to president; J. J. Desmond, division engineer, Illinois Central, Chicago, was advanced from second vice-president to first vice-president, and Armstrong Chinn, chief engineer of the Alton, Chicago, was elected second vice-president. T. F. Donahoe, supervisor of road, Baltimore & Ohio, Pittsburgh, Pa., and James Sweeney, supervisor (retired) of the Chicago & Eastern Illinois, Danville, Ill., were re-elected secretary and treasurer, respectively. J. J. Davis, roadmaster, Elgin, Joliet & Eastern, Joliet, Ill.; W. O. Frame, district engineer maintenance of way, Chicago, Burlington & Quincy, Burlington, Ia.; and F. B. Lafleur, roadmaster, Southern Pacific Lines, Lafayette, La., were elected members of the executive committee.

Chicago was selected unanimously as the place of the next convention and the following topics were submitted

to the executive committee as subjects to be discussed at the next convention:

Recent Developments in the Organization of Track Forces.

The Distribution and Handling of Ties from the Treating Plant or Storage Yard to the Point of Use.

The Maintenance of Tracks in Terminals—Organization, Materials and Methods.

Ballasting and Resurfacing Track—Equipment, Organization and Methods.

The Maintenance, Reclamation and Repair of Frogs, Switches, Railroad Crossings and Other Track Material, and the Economic Limitations of Such Practices.

Addresses of Welcome

Harry G. Taylor, chairman of the Western Association of Railway Executives presented an address of welcome on behalf of the railway managements, at the opening session, which was followed by greetings on behalf of the American Railway Engineering Association by R. H. Ford, first vice-president (assistant chief engineer, Chicago, Rock Island & Pacific), and on behalf of the American Railway Bridge & Building Association by C. S. Heritage, president, (bridge engineer, Kansas City Southern). A brief abstract of Mr. Taylor's remarks follows:

In 1929 the railroads of the United States expended a total of $855,000,000 plus for maintenance of roadway and structures. In 1933 that figure had dropped to only $322,000,000, or a little over one-third of the expenditures for 1929. In 1929 we employed 411,000 men in the maintenance of roadway and structures, and in 1933 that had dropped to 198,000.

You men appreciate the full significance of the catastrophe represented by these figures. I presume there have been many discouraging periods during the last five years, many disheartening events that have led you to wonder, with a skeleton force and skimped materials and unrelenting pressure to save expense and cut costs wherever possible, whether or not you would be able to carry on. But I am glad to be able to say that you have carried on. In my opinion, the record of the last five years, insofar as your relation to it is concerned, will go down in railroad history. It is a testimony to the thoroughness, completeness, skill and permanence with which you men have done your job.

Every transportation agency today is attempting to increase the speed of its operations. So we ourselves, in this competition of agencies, must expect to meet that demand on the part of the public for increased speed. If we have been building tracks for a maximum speed of 60 miles an hour, we will now have to lift our sights and build tracks for a maximum speed of at least 100 miles an hour, and perhaps more.

Also, we are facing as we never faced in this country before the demands for lower costs of operation. In the new forms of competition which press upon the railroads from every side, there is a necessity on our part for reducing our costs so that we are sure that we can operate on a comparable basis and probably at a lower basis than any of our competitors. And as we seek out the ways by which that can be done, our minds must be plastic. We will profit, of course, by the experience of the past, but we will be thinking in new terms and with new ideas and a challenge of new obligations which will make it necessary for every man to maintain an attitude of willingness to adjust himself to the new conditions.

I want to impress upon you if I can, if you don't remember anything else I say today, that railroading today has become a national enterprise. And as employees and as officers of individual railroads, you are yourselves a part of this national enterprise. The 250,000 miles of railroads in the United States has knit this continent into a unit such as exists nowhere else on this globe. We are operating on a scale and a magnitude that is duplicated nowhere else in the world. To be a railroad man is to occupy as desirable a position as exists in any other industry, and I refuse to listen to the man who tells me that the railroads have no future because I don't believe it.

Mr. Ford spoke along much the same vein as Mr. Taylor. "You men," he said, "who have passed through the most critical period of railway history know better than anyone else what the reduction in man-hours has taken out of your track structure. However, it is unthinkable that we can go on with reductions in personnel and costs, with less ballast, less rail, less drainage, with a concurrent increase in the demands for speed and safety. It seems inescapable that what you know as the maintenance of way shall inevitably be extended in some form and in some way that is yet to be worked out for our national transportation system." Mr. Heritage stressed the common interests of the Roadmasters' and the Bridge and Building associations and bespoke a continuation of the spirit of co-operation that has prevailed in their relationship for so many years.

Abstracts of addresses, committee reports and papers presented at the convention are given in following pages, except the committee reports on Highway Crossings, Embankment Maintenance, and Ballast Cleaning, and the papers by Earl Stimson and Robert Faries, which will be published in the next issue.

Address of Elmer T. Howson, President

The completion within the present year of the first streamline, high-speed passenger trains by the Union Pacific and the Chicago, Burlington & Quincy marks the beginning of a new era in railway transportation in this country. Already the advent of these trains has been followed by orders for others by these same roads and by a half dozen other roads as well. As a result, before we meet in convention next year, trains will be operating at speeds approaching 100 miles an hour on railways in New England and on the Pacific Coast and numerous areas intermediate. This development creates new problems for the track man, not perhaps so much in the strengthening of the track structure as in the refinement of line and surface.

Nor is the change in traffic conditions confined to passenger service, for the same trend is equally evident in freight operation. Hours and days have been cut off schedules, and tonnage trains are being run at passenger-train speeds. This again changes the problem confronting the track man.

Coincident with this demand for more exacting maintenance is that for greater economy in the conduct of work in the face of competition offering cheaper service. If the railways are to meet this competition, they must reduce all costs to the minimum, and the maintenance man must do his part. One way in which he is reducing his costs is through the use of machinery. He has already made much progress in this direction, but he must go much further—improving the equipment now available and devising equipment for tasks which are as yet done by hand.

Closely allied with the use of more and better equipment is the trend towards specialized gangs, each provided with equipment which will aid it in its particular task and manned with labor that becomes most proficient in the one operation. By such measures the section gang, which has long been the backbone of the maintenance of way organization, is becoming more of a first aid force, doing those tasks that arise daily and leaving the heavier tasks to the specialized gangs. Until recently, railway maintenance officers have been so engrossed with the problems of securing enough equipment for their various gangs that they gave no thought to the retirement of the less efficient units. Within the last three or four years, however, the number of gangs has been so reduced that there is ample equipment, if not a surplus, of many types.

This does not mean, however, that the equipment needs have been met, even with respect to this particular type of equipment. The development of much of this equipment has been rapid and later units frequently show vastly greater efficiency than their predecessors. Also, conditions of use on the railways are constantly changing and these changes affect the equipment. Take the motor car, as an illustration. Obviously, the car that was designed for a six-man gang of 1929 is too heavy to be handled comfortably and safely by the three-man gang of today. So it is with much other equipment which is being made obsolete by changing conditions much more rapidly than is generally appreciated.

Another lesson that we are learning since we last met is the more complete conservation of materials. The possibilities of extending the life of track materials by restoring the contour of worn surfaces by welding metal thereon, first developed with frogs and crossings, has extended to battered rail ends and to

joint bars, where it is rapidly becoming standard practice. With another recent development, the heat treatment of rail ends, it is rapidly bringing the life of the rail and fastenings to that of the treated ties, suggesting the possibility ultimately of renewing the entire track as a unit as is done on some of the highly maintained European railways, rather than piecemeal as we now do here.

Spot Versus Group Renewal of Ties

A comprehensive committee report, presented by E. H. Piper, trainmaster, C. B. & Q., McCook, Neb. (formerly district engineer maintenance of way), dealt with the relative merits of renewing ties by the spot, group and out of face methods, which were defined as follows:

Spot renewal implies tie renewals made generally with section forces, and dug in as they are necessary.

Group renewal implies tie renewals made in larger numbers, generally in connection with surfacing work, where the digging in of ties is deferred to some extent until a general surfacing of track is necessary.

Out-of-face renewals necessarily imply entire out-of-face replacement, which is not as yet in vogue in the United States, but is the practice of some European railroads.

Plan of Study

In conducting its study the committee canvassed the practices of the railways, obtaining reports of the methods employed on 33 roads representing a total of 175,020 line-miles. Excerpts from these reports showed that 15 roads adhere to the spot method, that 10 make group renewals under special conditions, and that 3 renew ties in groups as a standard practice.

The committee also made a study of crosstie renewal statistics for the years 1920 to 1933, inclusive, and offered the following comments regarding the current status of renewals:

Considering the wide spread in tie renewals from the 10-year average of 82,153,342 from 1920 to 1929 to a low of 37,294,836 during 1933, it is quite obvious that some deficiency exists. It is also quite obvious, considering the rapidly increasing installation of treated ties, that the average figures of the years 1920 to 1929 do not represent today's normal requirements. It is believed, likewise, that the average renewal of 42,662,323 ties in the three-year period from 1931 to 1933, during which forced reductions were made, represents subnormal installations. An average figure representative of normal requirements may be deduced from the high average of the period from 1920 to 1929, and the low average of the 1931 to 1933 period, or approximately 62,000,000 ties annually. This compares quite favorably with the renewals of 1930, when 63,353,828 ties were used and can be assumed as representing a more normal year. It is quite obvious, considering improved and heavier rail sections, angle bars, joint rail and welding, anchorage, larger and heavier tie plates, the extended use of treated ties, the decreased volume of freight traffic, the abandonment of branch lines, etc., that tie renewals will never again attain the proportions of former years.

Relative Merits of Spotting and Group Renewals

The committee's conclusions with respect to practice in making renewals, based on a study of current trends are abstracted below:

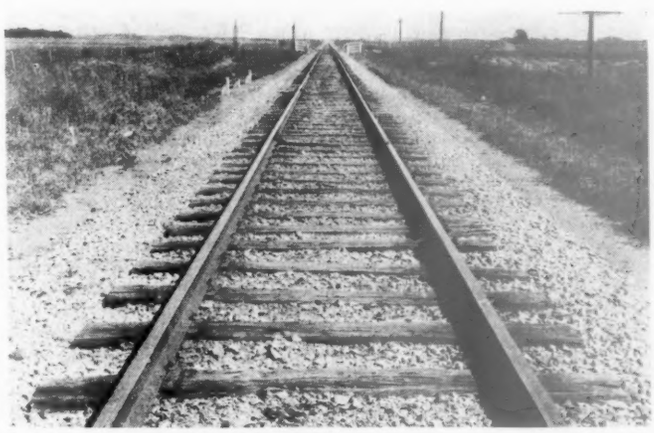
In the group renewal of ties, generally carried on in out-of-face surfacing, replacements are made at less cost per tie than when they are spotted in currently. It must be admitted that many ties renewed in accordance with such practices could see further service, but when removed and rehandled, the usefulness of a tie is somewhat impaired and it may not last any longer than in its former location; in fact, the saving made in the reduced cost of renewal may be offset by a loss of material and the rehandling charge.

One great benefit to be derived from the group-renewal method is the uniform bearing of all ties that is secured, since the renewal of larger numbers will necessarily carry with it a slight ballast lift. An additional advantage to be gained through the uniform bearing of all ties is a longer useful service life. Track will remain smoother for a somewhat longer period, as there is less disturbance. The less an old well-compacted roadbed is disturbed the longer the smooth-riding quality will obtain.

In special cases, where ties are not easily accessible for removal, it pays to renew them in groups, as for instance in street crossings, opposite station platforms, and in turnouts. Tie renewals made in groups result in less track disturbance for a longer period, but it must be remembered that when ties are renewed in groups, the track will necessarily reach a considerably weakened stage just prior to the time of renewal, unless the ties are renewed sooner than they should be.

In deferring replacements awaiting group renewals, ties may deteriorate to the extent that track becomes rough, and in such instances it is a waste of labor to spend money for tamping, as such track will not stand up. Other arguments against group renewals of ties are that the expenditures must necessarily be heavier for the reason that the ballast requirements must be larger, the force allotments must be higher, the cost of ties in the aggregate must be increased, and during subnormal business conditions it is possible that operating accounts can not bear such charges.

The spot method of tie renewals has its advantages, as well as its disadvantages. Where no unusual condition obtains, the spot method appears to be the most economical. If a reasonable number of ties is renewed currently, the strength or firmness of the track structure remains more nearly uniform at all times. In the very nature of things, this is the condition most desired,



Preservative Treatment and Improved Protection Against Mechanical Injury Have Greatly Reduced Tie Replacements

for it is impossible to keep sound ties in track at all times except at great and unnecessary expense. Spot renewals of ties necessarily cost more per tie inserted than those renewed under the group method. If larger numbers are spotted in, the tendency is to cause rough track. Where such renewals exceed 300 or more ties per mile, it is advisable to have the ties surfaced in rather than dug in, whereas in the spot-renewal method only such ties are renewed as have no further service life. Spotting in ties is generally accomplished by regularly assigned section gangs. When replaced in that manner, renewals are made progressively and promptly all over the railroad. Ties are replaced in the cooler seasons when labor may accomplish more and ballast is more easily worked. Also, ties are not strung out over as great a territory for so long a period. When inserted by section forces there is the tendency to see that work is done in a more thorough manner, as the foreman, in the final analysis, is responsible for a given stretch of track, and it is to his advantage to see that work is done thoroughly.

Discussion

In the discussion, the general consensus was that spot renewals provide the best method for renewing ties but attention was called to the fact that in most cases this will cause rough track if proper care is not exercised in trimming the old bed down to accommodate the greater depth of the new tie. If the ballast is clean, it was the general experience that ties can be spotted in without making the track rough, provided care is used in the preparation of the bed and in the subsequent tamp-

ing. It was generally agreed that this difficulty is not encountered where a general surface is carried out because in this case all ties are given an equal bearing.

Building a Maintenance Organization

By A. N. Reece*

On most roads in the United States, the earliest plan of maintenance consisted of the organization of section gangs supervised by section foremen, each of whom was held responsible for the condition of his track. Workmen were close at hand in case of emergency. Program work, such as crosstie renewals, ditching, right-of-way cutting, etc., was carried out over the entire line simultaneously. The men had homes and families and lived at home, which was conducive to their happiness and good citizenship. The supervisory force with this plan consisted of track supervisors, or roadmasters, who directed the efforts of a number of foremen, arranged for the necessary material, studied their problems, instructed them in proper methods of work, and in general were responsible for the efficient utilization of labor and material.

I am personally reluctant to abandon this form of organization. However, we must recognize the financial emergency with which the railways are now confronted demands that every possible effort be exerted to increase the efficiency of the maintenance organization. To accomplish this, I believe we now have before us a promising opportunity to replan our organization by making a more extensive use of the many excellent types of labor-saving equipment which have been developed in recent years. In addition, the most advantageous use of this equipment will require the formation of specialized gangs for its operation and further benefit and economy will be obtained through this specialization of labor.

Many different plans are being experimented with, which offer very encouraging prospects. One railway has practically eliminated section gangs, doing all its work with specialized gangs. Another has developed very large and completely mechanized gangs for specialized work, but has continued section forces for the usual section work. Another has gone quite extensively into the use of patrol cars in the directing of emergency work, handling routine work, which can be planned in advance, by specialized gangs. These experiments with the plan of our organization must be continued. It is a field which offers much opportunity and which should be thoroughly explored.

I believe when this plan is finally determined we shall effect a systematic renewal of materials, and all program work will be carried out by specialized gangs equipped with power machinery and organized and trained to secure the maximum efficiency from it. This very magnitude of this phase of maintenance work justifies complete reorganization to this end. I still believe there will be an important place for the section gangs in taking care of the unexpected and emergency work which cannot be anticipated.

In the rebuilding of our organizations we must give careful consideration to the most effective selection of men for the various duties. Extravagant claims and promises will often be made by men outside of the organization regarding their ability to fill a vacated position or a new position created by the acquisition of new equipment. I am convinced that we have the best material available for filling these positions in our own ranks. It is up to us to provide supervision and training that will develop this material to the required capacity. However, even under present conditions, it may occasionally be necessary to bring new men, especially trackmen, into the organization.

Much of the success of the organization will depend upon the proper selection of the foremen. The section foremen should be promoted from the section forces as this will provide the trackmen an incentive which will contribute much to their own happiness and to the welfare of the organization. Foremen should co-operate in this and train their men as prospective foremen. The supervisory officers should encourage the interest in this practice, as it will enable them to have a good supply of able men with which to fill vacancies in the ranks of foremen or to fit in with specialized gangs as they are found desirable.

Of equal importance to the selection of the members of the organization is the provision made for their training. We should never consider that the organization is trained to that point of perfection where no further progress can be made. Training consists of education, supervision and discipline. It extends through the entire organization. The Roadmasters' Association is a means which you have selected to keep yourselves informed on the progress of the times and to work out the solutions of your problems. You are, of course, familiar with its purpose and achievements. The opportunity presented by an association such as this for a combination of the experiences of all gives each of you the benefit of an experience which could not be hoped for within the life of one man.

The current railway magazines also offer an opportunity for keeping abreast of the times, of which the fullest advantage should be taken. The "Question and Answer" section of *Railway Engineering and Maintenance* should be actively participated in by all members of the supervisory force. Publications and literature should be passed along by supervisors to the foremen and trackmen and particularly to the specialized forces.

The supervisory forces should get actively into the spirit of this educational program and not only add to their own education, but pass this knowledge along so it will produce the fullest results. We have formed an association of the section foremen and supervisory forces on our line, which we have named the Kansas City Southern Maintenance of Way Association, and which is of very great benefit in accomplishing this. At the meetings of this association papers are presented on subjects of current interest, followed by open discussion by those present. We believe the close contact afforded by the organization and the interchange of ideas, have greatly increased the efficiency of the forces and the interest of the men in their work.

The roadmasters and supervisors are the driving force and nerve energy back of the maintenance organization. It is impossible for them to be on hand with their separate gangs each day. They must depend much upon the foremen they select to direct the different units of work, whether it be a specialized gang or one of the regular section gangs. The effect of the training of the foremen in charge of these gangs and the results of the roadmaster's or supervisor's development of the spirit of the forces will very largely govern the results obtained.

* Chief Engineer, Kansas City Southern.

Conservation of Rail

A report, prepared by a committee of which A. A. Johnson, engineer maintenance of way, D. L. & W., was chairman, reviewed practices in the manufacture, laying and maintenance of rail that exert an influence on the service life to be realized from it. Current developments in improved mill practice were touched on briefly, it being the opinion of the committee that controlled cooling methods are worthy of increased attention.

With respect to practice in rail laying, the committee urged care to insure accurate gage, good workmanship in adzing, close attention to track surface to avoid bending the new rail, and accuracy in provision for the expansion space at the joints. The use of canted tie plates was favored, and attention was directed to the importance of plates of adequate size. The necessity for a high quality of material in joint bars and bolts, and an adequate number of rail anchors was also emphasized.

The Maintenance of Rail

"Too much emphasis," according to the report, "is sometimes placed on the quantity of work accomplished and not enough on the quality. First-quality workmanship in laying and first-class maintenance will add materially to the life of rail and will prove most economical in the final analysis."

With respect to the maintenance of rail in track, the committee recommended a routine program for the maintenance of the proper bolt tension and the use of rail and flange lubricators on sharp curves, but directed particular attention to the influence of good ballast and sound ties on the service to be expected from the rail.

The committee also reviewed practice in the restoring of the running surface of rails that have become battered at the ends, and advocated the use of the welding process and the replacing of worn joint bars with built-up, reformed or oversize new bars. Heat treatment of rail ends was considered worthy of "further study and test," as was the practice of grinding rail ends to overcome variation in the height of rails at the joints.

Comments on the disadvantages of rerolling indicated that the committee did not favor it as a means of rail conservation.

Discussion

The discussion centered largely on the use of reformed angle bars, oversized bars and rail-joint shims, the discussion of bars serving to draw a distinction between the requirements for relayer rail that has been cropped and that of rail that is laid without sawing. The former should be provided with bars of uniform section, while the latter requires crowned bars for the best results.

The New Goal in Safety

By J. E. Long*

There are three of these fundamentals which are often grouped together as of major importance in our fight on accidents; namely, mechanical safeguarding, employee education, and engineering revision. Doubtless I should say that *today* they are grouped together; for there was a day when each of them was hailed as the newly discovered panacea of all of our accident troubles. I can remember some of the dismay that early safety engineers experienced when it was found that safeguarding machinery did not stop all accidents. For a time the safety movement seemed to us little more than a dream.

In the reaction from this disappointment, perhaps it was natural for blame to fall with heavy force upon the so-called "careless" employee. Suddenly we conceived the idea that if we could educate him in safe methods, make him "think" safety all the time, he would automatically avoid danger like a machine. We compiled statistics proving that most accidents occurred through some failure of the thoughtless, inefficient, reckless worker, and we set out by safety committees, safety meetings and safety talks to teach him all accident hazards.

But accidents continued. And one day, at the Annual Safety Congress in 1919, Dr. Lucien ridiculed our over-emphasis on the evangelistic type of propaganda and expounded the principle of engineering revision. In an investigation of the iron and steel industry, he had found that while but 7 per cent of the cases studied were amenable to engineering revision, 57 per cent of the *deaths* and *major* injuries could probably have been prevented by engineering measures. Dr. Chaney, of course, did not advocate the abandonment of either mechanical safeguarding or sane and persistent employee education, but he added the necessary third element to a balanced safety program.

However, we were not through with our development of safety fundamentals. Gradually we came to see that it was never fair to charge the employee wholly with the responsibility for accidents—even for those where guards had been wantonly removed or safe practices violated. For a long time we had used the foreman as our key man in teaching safety to the employees, and now we came to realize that his supervision was also a fundamental factor in accident prevention. We pounded this conception home to him in meetings and countless other ways, and most of us gladly placed the *full* responsibility for accidents on his shoulders.

But there is a basic fairness in men's minds which manifests itself in higher character. If it was unfair to charge the *worker* with full responsibility for accidents because he must look to a higher authority for knowledge and direction, was it not equally unfair to place this responsibility solely on the foreman? Unless management not only gave authority but also assumed full responsibility for the accident prevention program and its results, the safety campaign never could complete success. And looking back today over even a short period of years, we can see how the acceptance of this principle has revitalized the movement and how the dynamic force of executive direction has added new power to every safety fundamental.

Methods for the Future

But what of our work for tomorrow? There remains so much to be done, and there are so many channels into which our activities could be directed that I sometimes wonder if we would not be more outstandingly successful if we were to concentrate our attack on those phases of the accident problem in which immediate action is urgent and from which the most lasting good will result.

It may be that such a concentration of effort would defeat our own objective—but there is one activity in particular which I feel needs special emphasis and to which every railroad supervisor can well afford to devote a good share of his time and thought. This activity has to do with the investigation of accidents.

During the past 10 or 15 years, I have talked to hundreds of supervisors and from their experience I take it that the complete investigation of accidents is merely answering simple questions. These six questions are:

1. Was the machinery or equipment faulty in any way?
2. Was the worker following the best and safest method of performing his particular job?
3. Had the worker been trained to follow the best and safest method of doing his job?
4. Was he properly supervised?
5. Was the worker himself in any way at fault?
6. How frequently has this man been injured before? If the records reveal that he has been injured more frequently than other workers on similar jobs, then the supervisor has opened up for himself a whole vista of possible activities indicated by the answers to such questions as: Is he ill? Is he worried? Does he have normal eyesight? Is he better fitted for some other job?

In conclusion, there is one other thought which we must not overlook if we ever wish to attain our next goal in safety. Stated in its simplest terms, this thought has to do with getting every thinking person to assume his just share of the responsibility not only for his own safety, but also for the safety of his associates and others about him. Accidents will stop only when each individual accepts his personal responsibility for our accident toll. Accidents continue to occur because many of us evade this responsibility. We must learn that accidents do not just happen. In nearly every case they are caused by acts of omission of human beings.

Customs and habits of thought change slowly. So instead of becoming discouraged because of the seemingly slow progress that is being made, let us rather take encouragement from the accomplishments that have been achieved thus far, and rededicate ourselves to a cause that today has such a solid foundation and on which tomorrow's effort will continue to build with enduring strength.

* Superintendent of Safety, Delaware & Hudson and president National Safety Council.

New Books...

Administocracy—The Recovery Laws and Their Enforcement, by Guy S. Claire. 118 pages, 8½ in. by 5½ in. Paper bound. Published by the Macmillan Company, New York. Price 50 cents.

This pamphlet is designed to give a bird's-eye view of the recovery program. No attempt is made by the author to present a complete survey of all the alphabetical administrative agencies, but he has included a brief discussion on each of the more important ones. Among these discussions are chapters on the Federal Co-ordinator of Transportation, the Public Works Administration, the Reconstruction Finance Corporation, Bankruptcy Legislation and the Communications Act of 1934. Dr. Claire, now a practicing member of the Pennsylvania bar, was formerly a member of the law faculty of the University of Oregon.

Slim, a novel by William Wister Haines, 414 pages, 8 in. by 5½ in. Bound in cloth. Published by Little, Brown, and Company, Boston, Mass. Price $2.50.

Because this is such a realistic story of the life and works of linemen, it is a fascinating one. The author, although only 26 years old, is identified as one who has worked as a lineman for seven years; and in this time he has indeed observed keenly the mannerisms and peculiarities of speech, and penetrated deeply into the philosophy of these gruff, hardy men who build our electrical transmission lines. The hero—Slim Kincaid—is a Southern boy who leaves his uncle's farm for the fascination of line work and thereafter "booms" about the country building transmission-line towers and stringing wires, meanwhile participating along the way in the usual "extra-curricular" activities of the trade. In the final section, which will be of especial interest to railway men, Slim is engaged in catenary work on a large railway-electrification project; and here is a vivid account of life on a wire train.

Odds and Ends . . .

World's Smallest Railroader?

While all the excitement over the world's tallest railroader was going on, Bud Evans, special porter for the Gulf, Mobile & Northern at McLain, Miss., held his peace. Now that the furore has died down somewhat, Bud comes forward to look scornfully up at the long boys, for he, too, has a distinction, that of being the world's smallest railroader. Bud, at the age of 52, towers to all of 27 in. in height, and, after a hearty chicken

Bud Evans, Special Porter, Gulf, Mobile & Northern, Height 27 In., Weight, Nearly 60 Lb.

dinner, weighed in at just under 60 lb. He's been a railroader all his life, for, even as a child, his favorite playground was the railroad. Flattering offers to join circuses have come to Bud from time to time, but he's turned them all down without a thought, for "once a railroader, always a railroader" is Bud's motto.

Cedar Tie in Track 46 Years and Still Going

A cedar tie has recently been unearthed at Hermansville, Mich., where it was laid 46 years ago in connection with the operation of a charcoal kilns track at that point. When the track was removed, this 7-in. by 8-in. pole cedar tie that had been placed in the track in its original construction, was found to be in sufficient satisfactory condition to warrant its installation in the main track. The tie had been used with 60-lb. rail where the grade had been excavated about 4 ft. below the surface, leaving it during its 46 years of life, in a moist soil. Original installation did not include tie plates and a half an inch of wear occurred under the base of the rail. It is the opinion of trackmen that the tie now laid with tie plates under 80-lb. steel will remain in the track for 15 or 20 more years.

Some Old Railway Rules

Extracts from old railway rule books make amusing reading these days.

In England, in 1848, for example, it was the duty of the Great Western Railway superintendents to make themselves well acquainted by frequent personal intercourse with the character and conduct of every man under their orders. The superintendent's multifarious duties required him to see that the vehicles were properly cleaned and the glasses and handles made bright, and that "the buffers pressed against each other so that they receded about an inch." He had also to see that every passenger had a ticket, but where a passenger held a ticket short of his destination his duty included the seeing of the passenger off the station to which he had paid his fare, unless "being a respectable party, he could satisfy the superintendent that he had no intention of paying an improper fare."

Smoking on any part of the company's premises or trains was prohibited, and idleness or neglect of duty punishable by a fine. In the case of detention or stoppage of trains, guards were instructed to explain the cause to the passengers and "endeavor to pacify those who may be annoyed."

Railway Nicknames

From all over the country they come, the railway nicknames. Culled from some 50 letters received are the following:

Lake Erie & Western	Leave Early & Walk
Zanesville & Western	Zealous & Willing
Toronto, Hamilton & Buffalo	To Hell & Back
Susquehanna, Bloomsbury & Berwick	Sweet Bye & Bye
Cincinnati, Hamilton & Dayton	Charges High & Damned Rough Riding
Hoosac Tunnel & Wilmington	Hoot, Toot & Whistle
Hoosac Tunnel & Wilmington	Hot, Tired & Weary
Live Oak, Perry & Gulf	Lean Over, Push & Grunt
Live Oak, Perry & Gulf	Live On Peas & Grits
Manchester, Dorset & Granville	Mud, Dirt & Gravel
Baltimore & Ohio	Best & Only
Green Bay & Western	Grab Baggage & Walk

* * *

Certificate
of
DISTINGUISHED
SERVICE
BE IT HEREBY KNOWN BY THIS AWARD
THAT
The Union Pacific System
HAS BEEN JUDGED TO BE THE TRANSPORTATION SYSTEM IN THE UNITED STATES AND CANADA AS HAVING ACHIEVED THE MOST DURING THE PAST YEAR TOWARD THE STIMULATION OF TRAVEL IN AMERICA, AND THEREFORE HAS CONTRIBUTED MOST TOWARD THE PRINCIPLES AND OBJECTIVES OF THE "SEE AMERICA FIRST" MOVEMENT DURING THE AFORE SAID PERIOD.
BALTIMORE, MD. MAY 24th 1934
"SEE · AMERICA · FIRST" League
PRESIDENT
DIRECTOR GENERAL

Another Honor Added to the Union Pacific's List

NEWS

Co-ordinator Urges Federal Motor Carrier Regulation

Reiterates views favoring control by I.C.C. in address at N.A.M.B.O. meeting

Joseph B. Eastman, federal co-ordinator of transportation, reiterated his views that all motor carriers should be regulated by the Interstate Commerce Commission, where they engage in interstate commerce, in an address before the National Association of Motor Bus Operators at Cleveland, Ohio, on September 21. It has been found all over the world, he said, that it does not pay to leave transportation to the free play of unregulated competition, and "the government must see to it that this public business is preserved from disorder and waste and that it furnishes good service to all on equal terms and at known, reasonable and dependable rates."

Nevertheless, he said, although "a few of my railroad friends seem to think that the menace of highway competition can largely be removed by legislation," he was "sure beyond the peradventure of a doubt that if all the laws are enacted which should be enacted, highway carriage by motor vehicle will still thrive and the railroads will have this competition to face.

"If the users do not bear their fair share of the capital cost and maintenance of the highways," Mr. Eastman said, "they ought to do so. My staff has been working on that subject for some months, and I expect before long to issue a report which I believe will be both interesting and illuminating. It is a fact that the highways are responsible each year for a huge toll of killed and injured, and that public safety needs far more protection than it now gets. I believe, also, that the rates and service of motor carriers for hire should be publicly regulated.

"The principle must always be kept in the forefront like a guiding star that volume of movement is what is wanted, and that the great stimulus to volume is low cost. The possibilities of our country in the way of production of goods and the free interchange and movement of commodities and people are almost unlimited, but they will never be realized if the stimulus of low cost is neglected, and it should not be forgotten that cost decreases with volume. If the automobile had remained a luxury, the industry would not be where it is today. It is essential that neither railroad transportation nor any other form of transportation should gravitate into the luxury class, and the interests of labor, the investor and the general public in this matter are identical. That is why, in our work, my small staff is concentrating on the possibilities of reducing the cost and improving the quality of transportation service.

"Ever since federal regulation started, it has been a source of complaint and alibi for the railroads, or perhaps I should say for the professional railroad friends," he said. "The humor of the situation comes in the fact that the railroads and their friends are now with one accord and the utmost of zeal urging that this scourge of public 'regimentation' be applied to the railroad competitors. It might be consistent, of course, to urge this as a purely alternative proposition. They could say, 'Relieve us from this scourge, but at least, if you cannot be wise and reasonable, visit it equally upon our foes.' But this is not what they actually do say.

"The motor bus industry has for a long time recognized the need of adequate public regulation, and has not opposed it. Motor truck opinion has been shaped too much by those who build trucks rather than by those who operate them, but the need for some manner of national regulation has been recognized by the industry in the N. R. A. Code."

Mr. Eastman said that a fear which is often expressed is that the small truck operator will be at a great disadvantage under federal regulation, because he will be up against the opposition of the great railroad companies with their clever attorneys and their batteries of experts, but that "after a rather long experience with the species, I can testify that railroad attorneys and experts are not always, if I may fall into slang, such 'hot stuff.' Furthermore, when any fair tribunal is confronted by a case where there is a great disparity in the ability of counsel, it is apt to look out quite carefully for the rights of the underdog. The Interstate Commerce Commission has always regarded it as its duty to see to it, so far as is possible, that the pertinent facts are developed in the record, and many a case against a large railroad has been prosecuted successfully before it by a small shipper without the help of counsel. However, disregarding all these considerations, the small truck operators can find the answer in organization. The small short-line railroads have for many years had an association which has fought their battles very efficiently before both the commission and Congress."

JUDGE SAMUEL W. JOHNSON of the district court at Central City, Colo., has ruled that the value of the land owned by the Union Exploration Company and used as an approach to the Moffat tunnel is worth $15,000 instead of the $3,000,000 asked by the owners.

Finds Seatrain Service in the Public Interest

I.C.C. Examiner submits proposed report on application of M. P. and T. & P.

Following a comprehensive investigation of the service, financial relations, etc., of Seatrain Lines, Inc., Examiner C. E. Boles, of the Interstate Commerce Commission, has submitted a proposed report upon the application filed by the Missouri Pacific and the Texas & Pacific under Section 5 of the interstate commerce act, recommending a finding that the two railroads do and may compete for traffic with the Seatrain Lines between New Orleans and New York via Havana, but that the service of Seatrain Lines with the minority interest of the applicants in its stock "is being operated in the interest of the public and is of advantage to the convenience and commerce of the people; and that continuance of this service, with the interest of the applicants therein, will neither exclude, prevent, nor reduce competition on the water route in question."

Referring to certain findings regarding Seatrain's practices in a report in No. 25,546, New Orleans & Havana Car Ferry Service, which the Seatrain company urged the commission to correct, the report says that the record shows that during the period covered by the field investigation, most of which was prior to the inauguration of its coastwise service, "Seatrain's policies and practices in connection with its transportation between the United States and Cuba were very much as described in the commission's report," but that transportation between the United States and Cuba is not covered by the provisions of the interstate commerce act and that the record shows no violation of the act by Seatrain other than its failure to comply with certain provisions thereof after it entered the coastwise trade and prior to the date of the original report in No. 25,565.

The report finds that the two railroad companies now have a direct combined voting power in Seatrain equal to only 15.45 per cent of the whole, but that the interest which a rail carrier is forbidden by Section 5 (19) of the act to have in a water carrier is not necessarily a controlling interest and that the interest of the applicants is evidenced in numerous other ways. It is stated that their co-operation made the venture possible, that each applicant has a voice in the management of Seatrain, and that "from the record it is clear that if the applicants had no interest in Seatrain they would actively compete with it for certain traffic in which they are

now participating with Seatrain." The report also says that "the development of vessels of the Seatrain type marks a distinct advance in methods of water transportation."

R.F.C. Loans to Railroads

The Reconstruction Finance Corporation up to August 31 had disbursed $413,675,144 in loans to railroads, of which $70,486,162 had been repaid.

Club Meeting

The Car Foremen's Association of Chicago will hold its regular annual meeting at the La Salle Hotel, Chicago, on October 8. The reports of various committees covering the year's activities will be presented and new officers elected, after which there will be an extensive program of dancing and entertainment.

Zephyr in Movies

The "Zephyr," high speed train of the Chicago, Burlington & Quincy, has been taken to Hollywood, Cal., from the Century of Progress where it has been on exhibition, to be featured in an RKO "romance of the rails" to be entitled "The Silver Streak."

I. C. C. to Value Pipe Lines

The Interstate Commerce Commission, in connection with its valuation of the properties of pipe lines, has served an order on all carriers by pipe line of petroleum and petroleum products subject to the interstate commerce act calling on them to furnish maps, charts, and schedules of properties within 60 days from valuation dates to be set for the various properties by the director of the Bureau of Valuation.

Western Railroads to Deliver Automobiles to Dealers

Railroads in the western territory will now deliver automobiles shipped by rail to dealers in certain cities along their lines. Under the tariff, the automobiles are carried by rail from the factory to the destination station and are then transported by trucks to the dealer. The charge for delivery will be $7.50 or $8 added to the rate for station-to-station service.

N. & W. Surgeons' Association

The Surgeons' Association of the Norfolk & Western held its first convention since 1930 on September 26 and 27 at Atlantic City, N. J. More than 150 surgeons and physicians from Virginia, West Virginia, Ohio, North Carolina and Maryland attended. Included in the program were addresses by Dr. M. J. Payne, of Staunton, Va., president of the association, and J. B. Baskerville, of Roanoke, Va., general claim agent of the Norfolk & Western.

Illinois Fixes Rail Valuation

Taxable railroad property in Illinois has been valued tentatively for 1934 assessing purposes at $476,039,980. The figure represents 37 per cent of what the commission finds is the full taxable value of the state's 87 railroad systems and terminal companies, which total $1,270,000,000. The tax commission's figure was roughly double the $291,368,570 submitted in the tax schedules of the railroads themselves. The commission's figure, however, represents a decrease of about 3.25 per cent from 1933, when the valuation figure was placed at $492,033,338.

I.C.C. Asks Separate Report of Accruals for Retirement Fund

M. O. Lorenz, director of the Bureau of Statistics of the Interstate Commerce Commission, has addressed a circular le ter to the chief accounting officers of Class I railways saying it appears that the policy of the railways as to the time for beginning accruals in operating expenses of liability for payments to the federal retirement fund will not be uniform and therefore requesting that beginning with reports of revenues and expenses for the month of August a statement be appended showing separately the accruals under the retirement act and under previously existing pension plans, regardless of whether the accruals are made or not.

Annual Meeting of Traffic Clubs

The Associated Traffic Clubs of America will hold their annual meeting at the Neil House, Columbus, Ohio, on October 16-17, the meeting coinciding with that of the Ohio Valley Shippers' Advisory Board which will be held in Columbus on October 15. At a joint luncheon on October 15, Henry A. Palmer, editor and manager of the Traffic World and chairman of the board of directors of the Associated Traffic Clubs, will speak on Government Ownership of Railroads.

The general topic of the traffic clubs' convention will be Economic Planning as Applied to Transportation. Discussions will cover (1) The Public Trust Idea of Administration, (2) Current Experiments with Light-Weight Cars, (3) Competition in Transportation and (4) British Regulation of Transportation. Several leading authorities in the transportation field will address the convention.

Railway Fire Protection Association

The Railway Fire Protection Association, W. F. Hickey (N. Y., N. H. & H.), president, has issued its program of business for the annual meeting, to be held at The Congress Hotel, Chicago, on Tuesday and Wednesday, October 16 and 17.

The main business consists of reports by the principal committees, and the principal subjects to be considered are as follows:

Tuesday morning.—Locomotive fire hazards. Natural gas and gasoline pipe lines.

Tuesday afternoon. — Classification of storage yards. Shop plants. Snow melting oil and handling gasoline. Freight car heaters and refrigerator cars. Housing of employees. Incinerators. Timber treating plants. Bridges and trestles.

Wednesday morning.—Hand book. Fuel oil. Gasoline and electric motor trucks. Merchandise in transit; explosives. Hazards surrounding transportation and storage of cotton. Stations, Freight houses and Warehouses. Fire alarm signal system.

Wednesday afternoon.—Dust explosions in grain elevators; N. F. P. A. committee. Standard specification for rubber lined hose; A. R. E. A. committee. Fire prevention rules for M. W. department; A. R. E. A. committee.

Pennsylvania-Reading Seashore Lines

The Pennsylvania - Reading Seashore Lines carried 20 per cent more passengers during this year's summer season than were carried last year, the 1934 season's total being 3,000,000 an increase of 500,000 as compared with 1933. This company was formed a year ago through a merger of the Southern New Jersey lines of the Pennsylvania and the Reading.

During the present season the bulk of the new Philadelphia-Atlantic City passenger business sought the bridge route in preference to the ferry route via Camden, N. J. On the former, which is 10 miles longer from the Pennsylvania's Broad Street station in Philadelphia, the increase in traffic was 33 1/3 per cent while that of the ferry route was 10 per cent.

For the greater part of the summer season the ferry-route trains have been using the new Atlantic City terminal which is now nearing completion. With the inauguration of fall schedules on September 30 this new terminal will accommodate bridge-route trains as well, thus permitting the abandonment of the South Carolina Avenue station and freeing Atlantic City of grade crossings.

Regulations of Retirement Board Governing Employee Representatives

The Railroad Retirement Board has issued a series of rules and regulations governing the election by employees representatives to accept or reject the benefits of the retirement act. The term employee representative is defined as meaning any officer or other official representative of an employee organization who is duly designated and authorized to represent employees in accordance with the railway labor act. Until changed by the board the voluntary contribution to be made by such representatives is 6 per cent of their compensation. The regulations provide that the election of employee representatives who were such representatives on August 1, 1934, to participate in the benefits of the act shall be made before October 15. An employee representative who elects to accept the benefits of the act agrees thereby to pay into the railroad retirement fund the voluntary contribution, and the obligation to make such contributions continues for the entire period or period that he is such representative from August 1 or the date on which he assumes his duties as such representative, until the date his annuity begins, but after he ceases to be such, and during the period in which he is not such a representative, voluntary contributions are not required or permitted.

Reading and Pennsylvania Tickets Interchangeable

The Pennsylvania announces that between Norristown, Pa., and Pottsville, tickets issued by the Pennsylvania and the Reading, all classes, are now honored on trains of either railroad regardless of the line from which they are bought.

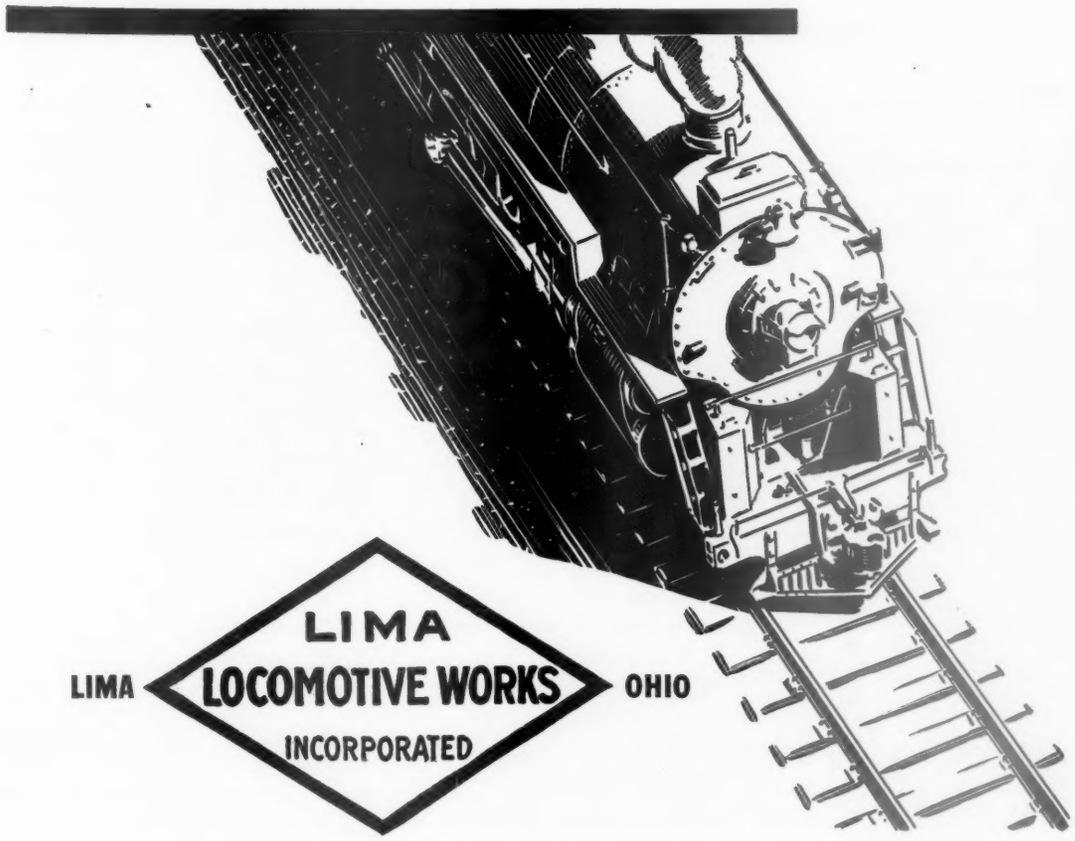
The Schuylkill Valley division of the Pennsylvania and the main line of the Reading are roughly parallel between Philadelphia and Pottsville.

According to the Official Guide the dis-

Continued on next left-hand page

NEW POWER IS NEEDED

The railroads which bind this country into one great economic unit are still the best means of providing low cost transportation. ● But if they are to maintain their competitive advantage they need modern motive power to speed operation and reduce costs.



LIMA LOCOMOTIVE WORKS INCORPORATED LIMA OHIO

tances on the Pennsylvania are: from Philadelphia to Norristown, 17.6 miles; to Reading 58.4 miles and to Pottsville, 94.7 miles. By the Reading they are about the same. Pottsville is given as 93.5 miles.

To and from all stations on this seventy-seven-mile section, the new arrangement will be available also from and to Philadelphia. Passengers will thus have the advantages of a good distribution of train service throughout the day. At Norristown the stations of the two roads are connected by a covered passageway and it is planned to arrange train connections there, with allowances of five minutes for transfer. Passengers from north of Norristown may use the Reading to that point and the Pennsylvania the rest of the way. Baggage will be checked through as in ordinary interchange service, and joint time tables will be issued.

Operating Revenues and Operating Expenses of Class I Steam Railways in the United States

Compiled from 147 Monthly Reports of Revenues and Expenses Representing 149 Class I Steam Railways

FOR THE MONTH OF JULY, 1934 AND 1933

Item	United States		Eastern District		Southern District		Western District	
	1934	1933	1934	1933	1934	1933	1934	1933
Average number of miles operated	239,160	240,879	59,195	59,517	45,441	45,769	134,524	135,593
Revenues:								
Freight	$221,290,910	$240,187,751	$90,357,709	$103,404,451	$40,744,324	$47,738,913	$90,188,877	$89,044,387
Passenger	32,186,790	30,964,125	19,101,351	18,210,349	3,553,056	3,288,509	9,532,383	9,465,267
Mail	7,178,656	7,333,732	2,745,854	2,826,151	1,269,034	1,272,818	3,163,768	3,234,763
Express	2,273,478	2,678,276	818,869	1,035,625	345,077	357,255	1,109,532	1,285,396
All other transportation	6,324,052	6,608,832	3,282,738	3,593,001	505,669	550,918	2,535,645	2,464,913
Incidental	6,104,683	5,409,260	3,131,703	2,890,062	772,625	755,970	2,200,355	1,763,228
Joint facility—Cr.	833,857	739,153	233,960	218,733	223,667	187,490	376,230	332,930
Joint facility—Dr.	208,909	197,256	53,336	47,404	19,464	21,415	136,109	128,437
Railway operating revenues	275,983,517	293,723,873	119,618,848	132,130,968	47,393,988	54,130,458	108,970,681	107,462,447
Expenses:								
Maintenance of way and structures	34,355,251	30,406,511	13,737,832	12,028,044	6,155,435	5,871,784	14,461,984	12,506,683
Maintenance of equipment*	53,914,811	51,675,006	23,773,862	23,858,473	10,286,077	9,675,448	19,854,872	18,141,085
Traffic	7,794,858	7,177,380	2,976,136	2,707,639	1,463,688	1,336,435	3,355,034	3,133,306
Transportation	97,890,893	91,890,401	45,078,040	43,090,065	15,895,674	15,376,979	36,917,179	33,423,357
Miscellaneous operations	2,404,863	2,042,782	1,111,172	1,009,628	226,791	205,921	1,066,900	827,233
General	12,516,573	11,925,114	5,501,823	5,114,130	2,144,466	2,041,287	4,870,284	4,769,697
Transportation for investment—Cr.	393,479	191,459	169,533	53,317	39,329	20,384	184,617	117,758
Railway operating expenses	208,483,770	194,925,735	92,009,332	87,754,662	36,132,802	34,487,470	80,341,636	72,683,603
Net revenue from railway operations	67,499,747	98,798,138	27,609,516	44,376,306	11,261,186	19,642,988	28,629,045	34,778,844
Railway tax accruals	21,285,508	23,057,558	9,035,152	9,780,757	3,914,763	4,278,426	8,335,593	8,998,375
Uncollectible railway revenues	88,607	80,677	44,720	33,322	12,629	9,697	31,258	37,658
Railway operating income	46,125,632	75,659,903	18,529,644	34,562,227	7,333,794	15,354,865	20,262,194	25,742,811
Equipment rents—Dr. balance	7,850,645	7,666,047	3,814,196	4,159,590	418,329	248,820	3,618,120	3,257,637
Joint facility rent—Dr. balance	3,054,097	3,241,254	1,663,926	1,725,239	389,032	439,519	1,001,139	1,076,496
Net railway operating income	35,220,890	64,752,602	13,051,522	28,677,398	6,526,433	14,666,526	15,642,935	21,408,678
Ratio of expenses to revenues (per cent)	75.54	66.36	76.92	66.41	76.24	63.71	73.73	67.64
* Includes:								
Depreciation	15,411,181	15,282,351	6,802,118	6,157,491	2,893,130	3,047,823	5,715,933	6,077,037
Retirements	377,370	1,489,251	60,734	1,054,903	170,629	112,454	146,007	321,894

FOR SEVEN MONTHS ENDED WITH JULY, 1934 AND 1933

Item	United States		Eastern District		Southern District		Western District	
	1934	1933	1934	1933	1934	1933	1934	1933
Average number of miles operated	239,321	241,207	59,210	59,600	45,461	45,828	134,650	135,779
Revenues:								
Freight	$1,541,362,301	$1,374,988,480	$677,376,006	$587,758,721	$308,768,206	$286,527,239	$555,218,089	$500,702,520
Passenger	197,377,804	180,966,839	118,960,705	107,928,139	25,978,423	21,837,609	52,438,676	51,201,091
Mail	52,176,531	52,512,006	20,243,173	20,575,943	9,193,079	9,046,391	22,740,279	22,889,672
Express	31,220,429	25,480,003	12,838,809	10,524,954	6,789,494	5,396,031	11,592,126	9,559,018
All other transportation	43,349,085	40,950,067	22,901,104	22,979,689	4,057,020	3,629,798	16,390,961	14,340,580
Incidental	36,485,945	30,788,042	19,837,895	17,410,605	5,418,668	4,564,934	11,229,382	8,812,503
Joint facility—Cr.	5,252,420	4,659,989	1,631,652	1,497,206	1,239,039	1,049,936	2,381,729	2,112,847
Joint facility—Dr.	1,343,897	1,298,852	356,590	357,064	114,050	127,706	873,257	814,082
Railway operating revenues	1,905,880,618	1,709,046,574	873,432,754	768,318,193	361,329,879	331,924,232	671,117,985	608,804,149
Expenses:								
Maintenance of way and structure	213,961,786	177,932,971	86,043,411	69,675,541	41,587,901	36,505,999	86,330,474	71,751,431
Maintenance of equipment †	382,072,614	330,467,366	174,709,242	146,699,093	71,943,453	62,972,667	135,419,919	120,795,606
Traffic	51,954,789	49,852,629	19,594,099	18,438,310	9,895,747	9,594,941	22,464,943	21,819,378
Transportation	673,301,532	610,592,860	320,113,155	282,934,231	113,042,151	103,957,604	240,146,226	223,701,025
Miscellaneous operations	15,285,736	12,937,347	7,537,109	6,506,465	1,885,326	1,543,694	5,863,301	4,887,188
General	85,785,298	83,812,038	37,713,197	36,003,000	14,587,986	14,270,930	33,484,115	33,538,108
Transportation for investment—Cr.	1,590,922	1,618,472	481,114	621,475	179,530	185,679	930,278	811,318
Railway operating expenses	1,420,770,833	1,263,976,739	645,229,099	559,635,165	252,763,034	228,660,156	522,778,700	475,681,418
Net revenue from railway operations	485,109,785	445,069,835	228,203,655	208,683,028	108,566,845	103,264,076	148,339,285	133,122,731
Railway tax accruals	149,100,376	154,835,597	62,290,623	63,065,025	29,574,924	29,866,349	57,234,829	61,904,223
Uncollectible railway revenues	677,564	564,875	359,134	230,929	108,477	71,658	209,953	262,288
Railway operating income	335,331,845	289,669,363	165,553,898	145,387,074	78,883,444	73,326,069	90,894,503	70,956,220
Equipment rents—Dr. balance	53,148,752	49,219,077	26,623,563	24,641,191	4,451,585	4,024,323	22,073,604	20,553,563
Joint facility rent—Dr. balance	21,158,288	20,968,758	11,656,212	11,223,555	2,616,082	2,324,307	6,885,994	7,420,896
Net railway operating income	261,024,805	219,481,528	127,274,123	109,522,328	71,815,777	66,977,439	61,934,905	42,981,761
Ratio of expenses to revenues (per cent)	74.55	73.96	73.87	72.84	69.95	68.89	77.90	78.13
† Includes:								
Depreciation	108,306,583	105,019,704	47,777,125	41,219,485	20,308,867	21,087,889	40,220,591	42,712,330
Retirements	2,796,530	7,816,511	747,948	6,264,945	1,081,152	527,088	967,430	1,024,478

d Deficit or other reverse items.

Compiled by Bureau of Statistics, Interstate Commerce Commission. Subject to Revision.

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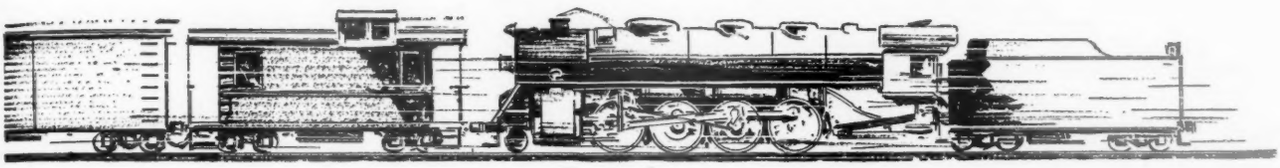
Quit Dragging

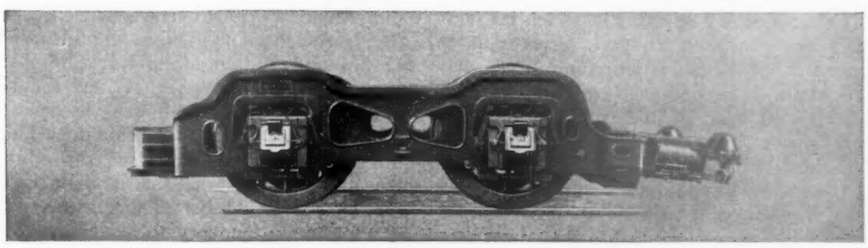
A PUSHER LOCOMOTIVE



Over Every Run

Use of The Locomotive Booster to start the train, and to help over the hard pulls, avoids the need of a lot of excess locomotive weight to be hauled around perhaps 80% of the time, when it is only needed for short periods. The Booster furnishes the extra tractive effort when needed.

Avoiding the need of hauling this excess weight over the road saves a great deal of wear on locomotive parts and saves many maintenance and fuel dollars.



Because material and tolerances are just right for the job, genuine Franklin repair parts give maximum service life.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

Railways Represented on Stock Exchange Committee

Ten "outsiders" have been appointed to the governing committee of the New York Stock Exchange — without, however, the privilege of voting. Of the ten, five have been chosen from members of stock exchange firms. Of the other five, one is F. E. Williamson, president of the New York Central; another is R. B. White, president of the Western Union Telegraph Company and former president of the Central of New Jersey; a third is George H. Houston, president of the Baldwin Locomotive Works. The other two "outsider" committeemen are Fred I. Kent, foreign exchange expert, and A. A. Berle, Jr., chamberlain of New York City (who at times has served as a special adviser to the Railroad Division of the Reconstruction Finance Corporation).

B.&O. to Use P.&L.E. into Pittsburgh

Beginning September 30, all Baltimore & Ohio through east and west trains, between Chicago, Washington and New York, will arrrive at and depart from the Pittsburgh & Lake Erie Smithfield street station in Pittsburgh, Pa. All other trains of the company will use the Baltimore & Ohio Smithfield street station as heretofore.

This change is the outcome of an arrangement entered into between the Baltimore & Ohio and New York Central Lines whereby the Baltimore & Ohio through trains will operate over the Pittsburgh & Lake Erie between McKeesport and New Castle, Pa., which will shorten the route and, by use of the lower grade line, will avoid the use of helper engines out of Pittsburgh and permit the quickening up of schedules of from 15 to 45 minutes. By this rearrangement certain trains, such as the well-known Capitol Limited, which heretofore have not operated into Pittsburgh, will serve that city. Some of the Baltimore & Ohio freight trains also will operate over the Pittsburgh & Lake Erie between McKeesport and New Castle.

National Mediation Board Certifies as to Representation of Employees

The National Meditation Board, under the provisions of the recent amendments to the railway labor act, has been issuing a series of certifications as to the results of elections held in cases in which its services were invoked to settle disputes as to what labor organization should properly represent the employees of various railroads. In most of the cases so far shop employees were involved and on the basis of the investigation and check of authorizations the board has certified that the Railway Employees' Department of the American Federation of Labor has been duly designated and authorized to represent the shop employees. Such a certification was made as to the Missouri Pacific, the Florida East Coast, the Central of Georgia, the Illinois Central, the Delaware, Lackawanna & Western, and the Virginian. It has also certified that the Brotherhood of Railway and Steamship Clerks has been designated to represent the clerical and other office employees of the Kansas City Terminal and the office, station and allied yard employees of the St. Joseph Terminal, that the American Train Dispatchers' Association is authorized to represent the train dispatching employees of the Missouri Pacific, and that the Illinois Central Train Dispatchers' Association has been authorized to represent the dispatchers on the Illinois Central.

Steam Railway Accident Statistics June, 1934

The Interstate Commerce Commission's completed statistics of steam railway accidents for the month of June, now in preparation for the printer, will show:

	Month of June		6 months ended with June	
Number of train accidents:				
Total	458	481	3,146	2,554
(At highway grade crossings, included in total)	7	9	67	59
Number of casualties in train, train service and nontrain accidents:				
Trespassers:				
Killed	277	297	1,172	1,220
Injured	343	447	1,446	1,825
Passengers on trains:				
Killed	2	3	12	6
Injured	159	120	822	707
Item	1934	1933	1934	1933
Employees on duty:				
Killed	37	33	281	208
Injured	1,559	1,303	8,432	7,244
All other nontrespassers:*				
Killed	108	118	769	713
Injured	430	415	3,119	2,524
Total—All classes of persons:				
Killed	424	451	2,234	2,147
Injured	2,491	2,285	13,819	12,300

* Casualties to "Other nontrespassers" happen chiefly at highway grade-crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers,* were as follows:

Killed	89	104	706	645
Injured	237	228	2,023	1,481

Many Shippers Plan Opposition to Rate Increase

Letters received by the Interstate Commerce Commission and action taken by various associations of shippers indicate that there will be plenty of opposition to the application of the railroads for an increase in freight rates at the hearing before the commission which begins on October 1. At a recent conference in Washington representatives of several national organizations announced their opposition, including the National Coal Association, the American Farm Bureau Federation, the National Dairy Union, the American Cream and Butter Manufacturers' Association, the National Grange, and the National Lumber Manufacturers' Association. The National Coal Association in a bulletin to its members expressed the opinion that the railroads made a mistake in including coal in the list of increases, saying it will have a tendency to drive coal away from the rail lines as well as from the mining industry.

Secretary Wallace, of the Department of Agriculture, has written to the commission asking it to invite representatives of the department to appear at the hearing as "friends of the court" and present various agricultural statistics bearing on the effect of freight rates on agriculture. He said he had discussed the matter with Co-ordinator Eastman and had "cleared" through the Reconstruction Finance Corporation and that he understood that such a plan was in accordance with past practice. Commissioner Meyer, as acting chairman, replied saying the commission would be pleased to have the department submit such testimony as might be pertinent.

The Great Lakes Transit Company, the Minnesota Atlantic Transit Company, the Cleveland & Buffalo Transit Company, and the Detroit & Cleveland Navigation Company, operating on the Great Lakes, have filed a petition concurring in the request made by the railroads for increased freight rates.

Beatty Finds Western Canada Friendly to Merger

Unification of Canada's two principal railways, the Canadian Pacific and the Canadian National under private control is the demand of a growing number of people in Western Canada, according to E. W. Beatty, president of the Canadian Pacific in a statement made in Montreal last week on his return after a 10,000-mile tour of Western lines.

"Stimulation and encouragement," said Mr. Beatty, "were the almost unfailing results of the conversations we had with the business men of the cities and towns visited on our swing around the country, and the same is true of our talks with representatives of the farming industry. Despite past troubles and undoubted difficulties ahead, we met everywhere a quiet tone of determined optimism and a confident feeling that the worst lay behind us.

"I noted, too, a greatly increased interest in, and a desire to discuss, national questions, more particularly that of the railway problem, and I was encouraged to find a widespread awakening to the seriousness of the situation and a very evident determination to have something effective done about it. I return from the West even more strongly convinced that those who make the statement that the people of Canada would not even consider railway unification for operation purposes, as I have proposed, are singularly ill-informed upon what is going on in the minds and conversations of the people of the country."

Grain Elevator Operators Organize for Defense

The lessees and operators of grain elevators leased from railroads in Kansas City, Chicago, Milwaukee and other terminal markets have organized the Leased Elevator Association for the purpose of defending their position and replying to the two reports and recommendations released by Co-ordinator Eastman, on August 30, as having been made by his special investigator, J. A. Little. The association has employed as its counsel Benjamin F. Goldstein, of Chicago, Illinois.

The Little reports have been referred by Mr. Eastman to his western regional director for further consideration. According to these reports, the railroads have not received adequate return on investment from leases made to private operators in terminal markets. It was recommended by Mr. Little that the carriers themselves pool and operate these elevators as public grain elevators to increase their revenues and effect certain economies in switching

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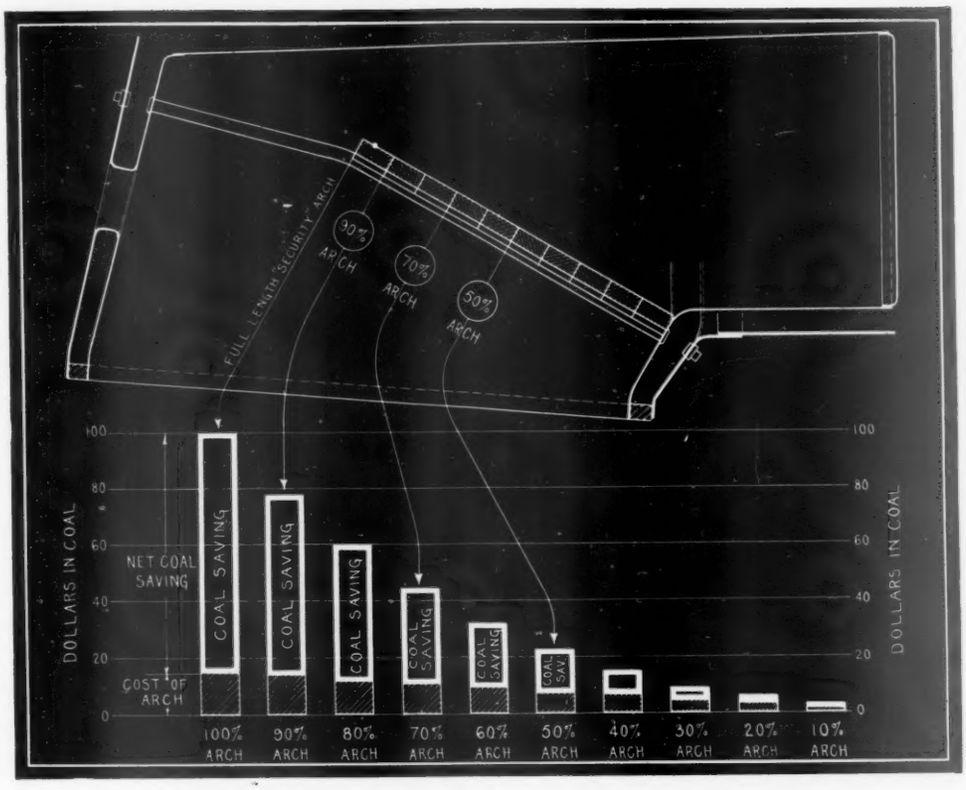
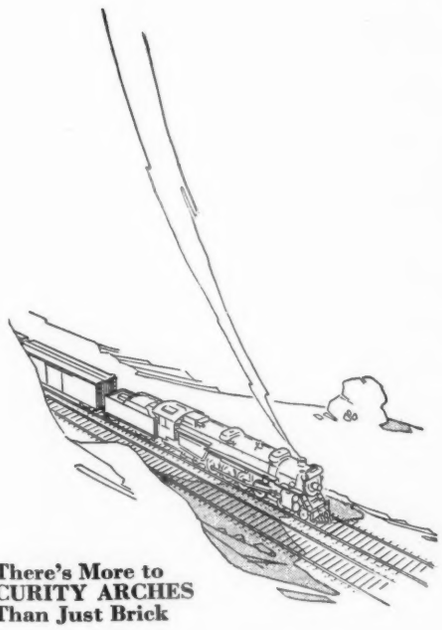


THE EFFECT OF ABBREVIATED ARCHES ON FUEL SAVING

THE SECURITY ARCH OFFERS

One of the Surest Ways To REDUCE FUEL COSTS



There's More to SECURITY ARCHES Than Just Brick

Every railroad realizes the importance of the wise use of coal.

Yet unless the full length Security Arch is maintained fuel economy suffers.

This waste in fuel is not in proportion to the Security Arch length but is as shown in the chart above.

Omitting a course of brick results in a $10 fuel loss for every $1 the Security Arch Brick would cost.

For best fuel economy a full Security Arch is essential.

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists

NRA MEMBER U.S. WE DO OUR PART

AMERICAN ARCH CO.
INCORPORATED

Locomotive Combustion Specialists » » »

and crosshaul expense. Mr. Goldstein stated:

"The association's reply will present for the first time an exhaustive and complete picture of grain marketing in terminal markets and the relation of terminal private and public elevators thereto; will show that the present leasing arrangements are fair; establish the impracticability of carrier operation and pooling of such elevators; and show that the proposed plan will disrupt the present marketing machinery for the distribution of grain.

"The Little reports cover a subject matter which is highly technical and affects a very sensitive part of the grain marketing machinery. It is unfortunate that in certain quarters his reports and recommendations have been seized upon to add the leasing arrangements of grain elevators by carriers as part of the problems of carrier control and solution. When it is considered that the total investment of the carriers in none of the major terminal markets involved—Kansas City, Chicago, and Milwaukee—is, according to Mr. Little, in excess of $20,000,000, and that even if his figures were correct, his assumptions fact and his prognostications realized (which they are not and cannot be), the net tangible increase through carrier operation in any of these markets would be negligible and be distributed among the many carriers concerned, the insignificance of this source of revenue as a possible solution to the carrier problem is at once apparent."

Track Supply Exhibit

Thirty-eight manufacturers of materials and devices used in the construction and maintenance of tracks presented exhibits under the auspices of the Track Supply Association at the Hotel Stevens, Chicago, on September 18-20, in connection with the convention of the Roadmasters' and Maintenance of Way Association.

The officers of the Track Supply Association, who have been responsible for the preparation and conduct of the exhibit, were: President D. J. Higgins, Gardner-Denver Company, Chicago, vice-president, G. T. Willard, Cleveland Tractor Company, St. Louis, Mo., secretary-treasurer, L. C. Ryan, Oxweld Railroad Service Co., Chicago; directors, L. S. Walker, P & M Company, New York; Ward B. Maurer, American Hoist & Derrick Co., Chicago; G. M. Hogan, Sellers Manufacturing Co., Chicago; F. J. Reagan, American Fork & Hoe Co., Chicago; ex-officio, L. P. Shanahan, American Steel & Wire Co., Chicago.

In the election of officers, Mr. Willard was advanced to president; Mr. Reagan was elected vice-president, and D. J. Higgins was elected secretary-treasurer. George E. Johnson, representative, P & M Company, Chicago, and Lem Adams, chief engineer, Oxweld Railroad Service, Chicago, were elected directors.

The list of exhibitors follows:

Air Reduction Sales Company, New York; welding and cutting equipment; oxygen and acetylene regulators; carbide lights, lamps and lanterns; welding rods, goggles, built-up and heat-treated rail joints; C. A. Daley, E. M. Sexton, B. N. Law, W. H. Ludington, R. T. Peabody, J. F. Callahan, W. A. Andrews, Jr.; W. H. Handrock, J. W. Kenefic and M. M. Weist.

American Fork & Hoe Company, Cleveland, Ohio; rail anchors, tapered rail-joint shims, shovels, weed cutters, forks, rakes, scuffle hoes and broom rakes; Frank J. Reagan, J. D. Christie, G. L. Dunn, A. F. Fifield, S. L. Henderson, C. E. Irwin, J. J. Nolan, F. C. Stowell and H. C. Branahl.

Austin-Western Road Machinery Company, Aurora, Ill.; models, moving pictures, and literature on dump cars and tractors with railroad attachments; Jess Mossgrove, S. F. Beatty, Jr.; H. B. Bushnell, Bruce Smith and J. D. Benbow.

Chipman Chemical Company, Inc., Bound Brook, N. J.; literature on chemical weed killers; J. K. Aiman and N. J. Leavitt.

Conley Frog & Switch Company, Memphis, Tenn.; models of solid manganese expansion rails for bridges, and model of solid manganese self-guarded spring frog; J. E. Conley and B. H. Baumgarten.

Duff-Norton Manufacturing Company, Pittsburgh, Pa.; track jacks, journal jacks, automatic lowering jacks and tie spacers; E. E. Thulin and C. N. Thulin.

Eaton Manufacturing Company, Reliance Spring Washer Division, Massillon, Ohio; spring washers; E. D. Cowlin, A. H. Weston, R. L. Shireman and E. C. Cross.

Illinois Malleable Iron Company, Chicago; rail anchors; H. A. Morean, Chas. G. Ericson and W. T. Kelly.

Ingersoll-Rand Company, New York; pneumatic tie tamper, track wrench, rail drill, spike driver, rivet buster, riveting hammer, chipping hammer, holder on, air-line lubricator, safety saw, sump pump, wood borer, screw-spike wrench, clamp bolt wrench, grinders and scaling tool; Wm. H. Armstrong, G. W. Morrow, T. H. Weigand, G. E. Bridge and E. C. Geither.

International-Harvester Company, Chicago; I-12 industrial tractor, and T-40 Diesel power unit; R. M. McCroskey, H. P. Thieman, W. M. Parrish, A. W. Turner, W. F. Hebard, B. C. Cooper, William Hensel and Blake C. Howard.

O. F. Jordan Company, East Chicago, Ind.; model of spreader ditcher; H. M. McFarlane, J. C. Forbes and A. W. Banton.

Kelsey-Hayes Wheel Company, Detroit, Mich.; spring washers; D. J. Crowley, H. G. Jackson and G. A. DeLisle.

Lundie Engineering Corporation, New York; tie plates and rail lubricator; Eugene Brandeis, L. B. Armstrong and C. E. Irwin.

Maintenance Equipment Company, Chicago; switch point protector, rail and flange lubricator, model of friction car stop and literature on power tools, lubricators and fence posts; T. E. Rodman, D. M. Clarke, E. Overmier, R. J. Shanahan and A. J. Frystak.

Mall Tool Co., Chicago; portable rail grinders and flexible-shaft cross-grinding and nut-setting equipment; A. W. Mall and O. H. Dallman.

Morden Frog & Crossing Works, Chicago; heat-treated forged compromise joints, adjustable rail braces and miscellaneous forged fittings for switches; E. C. Argust, G. F. Killmer, Sam Withrow and R. A. Brown.

National Lock Washer Company, Newark, N. J.; spring washers and literature; W. R. Hillary, G. L. R. Masters, R. L. Cairncross and F. B. Archibald.

Nordberg Manufacturing Company, Milwaukee, Wis.; rail grinders, power wrench, utility grinder, and accessories; H. H. Talboys, W. W. Fitzpatrick and C. P. Clemmens.

Oxweld Railroad Service Company, Chicago; oxy-acetylene welding and cutting apparatus; L. C. Ryan, Lem Adams, J. E. Winslow and W. H. Kofmehl.

P & M Company, Chicago; rail anti-creepers and bond-wire protectors; D. T. Hallberg, W. A. Maxwell, J. E. Mahoney, G. E. Webster, G. E. Johnson and J. T. Gallagher.

Pettibone Mulliken Company, Chicago; switch stands, switch point lock, mechanical switchman and heel filler; G. J. Slibeck, I. B. Campbell G. R. Lyman, T. B. Nash, C. Johnson and C. F. Landberg.

Pocket List of Railroad Officials, New York; copies of Pocket List of Railroad Officials; J. Alexander Brown and B. J. Wilson.

Positive Rail Anchor Company, Chicago; rail anchors and guard-rail plates and braces, adjustable rail braces, adjustable track wrench and reflectorized railroad signs; A. H. Told, L. C. Ferguson, J. Imhoff, I. Larson and D. Willard.

Rail Joint Company, New York; insulated and standard rail joints; E. A. Condit, Alex Champan, C. B. Griffin, Harry C. Hickey, G. H. Larson and Thomas Ryan.

Railroad Accessories Corporation, New York; moving picture of power track machine; S. G. Ellis.

Railway Age, Chicago; copies of Railway Engineering and Maintenance and Railway Age; Henry Lee, C. R. Mills, F. H. Thompson, Elmer T. Howson, F. C. Koch, W. S. Lacher, H. A Morrison, I G. Little, C. I. Wageman, G. E. Boyd, H. E. McCandless, M. H. Dick, Charles Packard and S. W. Hickey.

Railway Purchases and Stores, Chicago; copies of Railway Purchases and Stores; Edward Wray, K. F. Sheeran and I. P. Murphy.

Railway Track-Work Company, Philadelphia, Pa.; portable electric track grinder, portable stock-rail grinder, rail-joint cross grinder, portable reciprocating grinder, portable flexible shaft grinder and grinding wheels; A. M. Nardini and Henry Perazzoli.

Ramapo Ajax Corporation, New York; full-size model highway crossing, switch points, switch stands, guard rail clamp, adjustable rail brace, limit gage, clips, sanitary water carrier, reversible manganese steel crossing and gage rods; J. B. Strong, J. B. Davidson, G. M. Cooper, G. A. Carlson, R. E. Einstein, D. Fairback, W J. Fairback, D. F. Hilton, P. Hoffman, J. S. Hutchins, A. F. Huber, H. W. Renick and W. Perdue.

Sellers Manufacturing Company, Chicago; wrought iron tie plates, and angle bars; G. M. Hogan, R. J. Platt, R. A. VanHouten and J. T. Flynn.

Sinclair Refining Company, Headley Asphalt Division, New York; emulsified asphalt; W. T. Gilbert, W. T. Reece, Walton Collins and W. D. Achuff.

Frank Speno Railroad Ballast Cleaning Co., Inc., Ithaca, N. Y.; literature, photographs and moving pictures of ballast cleaning operation; Frank Speno, Jr. and Thomas Speno.

Sherry Rail Service, New York; moving picture of testing rails in track with detector cars, exhibit of transverse fissured rail sections, and track recording device; C. W. Gennet, Jr., J. A. Drain, Jr., Andrew Stewart, E. A. Crawford and J. D. Williams.

Standard Equipments, Inc., New York; rail joint assembly forging sequence and joint crown instrument; C. O. Bradshaw, A. E. Hill and E. W. Backes.

Teleweld, Inc., Chicago; rail joint shims, samples of welded rails showing effects of pre-heating, samples of heat-treated rail and field-hardness testing kit; A. M. Wood and T. L. Borman.

Templeton, Kenly & Co., Chicago; jacks, tie spacer and rail puller expander; George L. Mayer, Chas. Neher, W. B. Templeton and W. C. Cornu.

White Manufacturing Company, Elkhart, Ind.; gas and oil burning switch heaters, kerosene torches, concrete vibrators and concrete guns; W. McK. White and C. L. Dewey.

Woodings-Verona Tool Works, and Woodings Forge & Tool Company, Verona, Pa.; rail anchors, gaging tool, track levels and gages, track jacks, nut locks, triflex springs and tie plates; R. J. McComb, James McComb, E. Woodings, R. T. Woodings, W. H. Woodings and A. C. Laessig.

Construction

CHESAPEAKE & OHIO.—Bids were received by this company on September 20 for change of line and improved drainage facilities at England Hill, Ky., on the Big Sandy division, Mile Post 1. The cost of the work will be about $79,000.

LOS ANGELES & SALT LAKE.—This company has applied to the Interstate Commerce Commission for a certificate authorizing the construction of an extension in Iron county, Utah, a distance of 11.31 miles from Desert Mound.

PENNSYLVANIA.—A contract has been given to W. F. Trumble & Sons Company, Pittsburgh, Pa., for alterations to the stock yards at Pittsburgh (Herrs Island), Pa., at a cost of about $25,000. Bids will be received October 2 for a culvert to be built at Blacks Run, Pa., at a cost of about $25,000.

SOUTHERN PACIFIC LINES IN TEXAS AND LOUISIANA.—A contract has been awarded to Gifford-Hill & Co., Inc., Dallas, Tex., for clearing, grubbing and grading, and the construction of drainage structures on the site of this company's proposed new terminal yard at New Orleans, La. This yard is being constructed in preparation for the completion of the combined highway-railway bridge across the Mississippi river at this point, which is now under construction. A contract has been awarded to the W. J. Harris Contracting Company, Houston, Tex., for the removal of a portion of this company's Baton Rouge branch between Ramah, Miss., and Sunrise.

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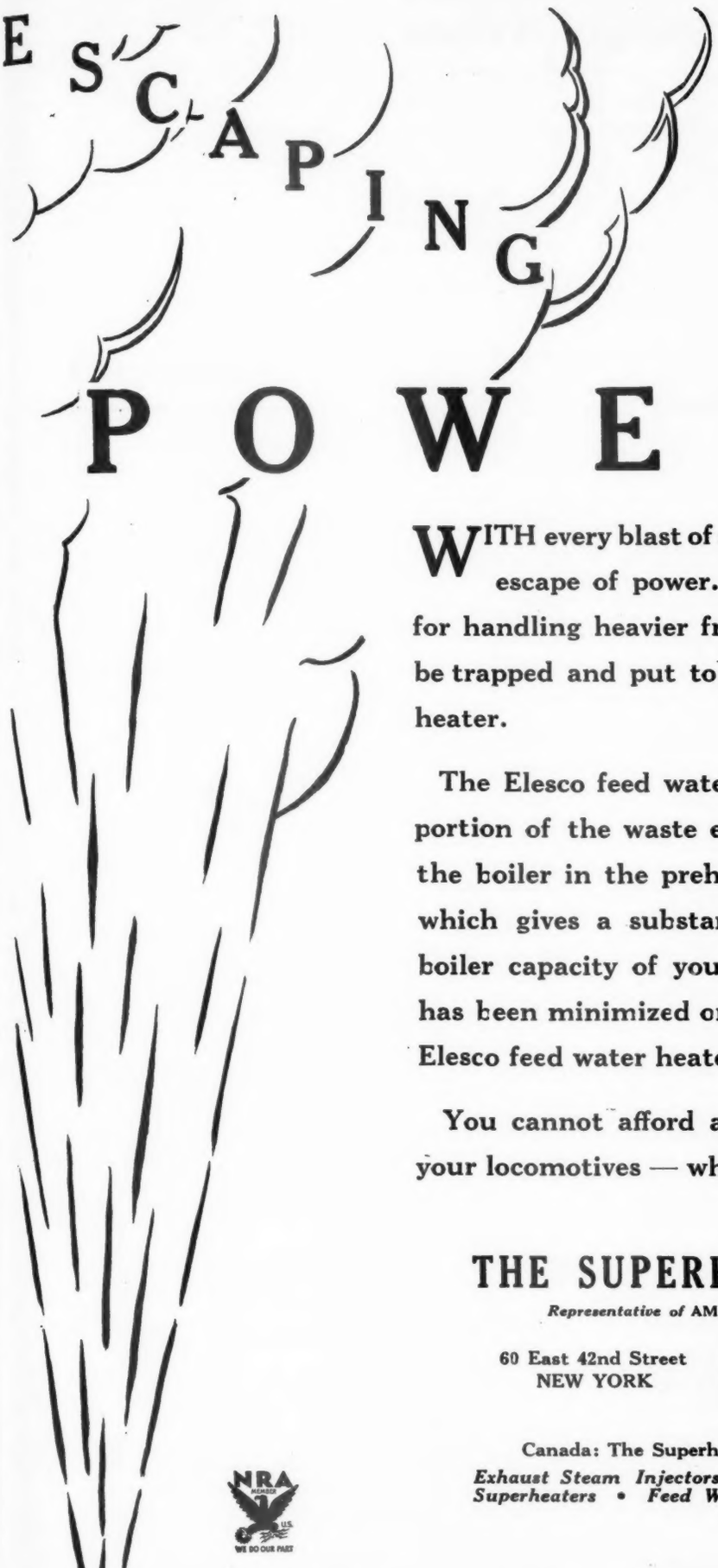


WITH every blast of exhaust steam there is a needless escape of power. This lost power, so necessary for handling heavier freight and passenger traffic, can be trapped and put to work by an Elesco feed water heater.

The Elesco feed water heater reclaims the heat in a portion of the waste exhaust steam and returns it to the boiler in the preheated feed water . . . a process which gives a substantial increase in the sustained boiler capacity of your locomotives. Escaping power has been minimized on nearly 4000 locomotives by the Elesco feed water heater.

You cannot afford any needless waste of power on your locomotives — why not investigate today?

THE SUPERHEATER COMPANY

Representative of AMERICAN THROTTLE COMPANY, INC.

60 East 42nd Street
NEW YORK

ELESCO

Peoples Gas Building
CHICAGO

A-913

Canada: The Superheater Company, Limited, Montreal

Exhaust Steam Injectors • Superheated Steam Pyrometers
Superheaters • Feed Water Heaters • American Throttles

NRA MEMBER U.S. WE DO OUR PART

Equipment and Supplies

P.W.A. Loans to Railroads

The Chicago & North Western has applied to the Public Works Administration for a loan of $5,650,557 for maintenance and equipment work including heavy repairs to 160 locomotives at an estimated cost of $1,192,500, general overhauling and modernizing of 38 steel coaches, $379,067, installing air conditioning equipment in 6 steel dining cars, 19 steel parlor cars, and 20 steel lounge cars, $358,990, and general maintenance work on roadway, structures and equipment, $3,720,000.

LOCOMOTIVES

The Chicago & Illinois Midland contemplates buying two locomotives of the 0-8-0 type.

The National Railways of Colombia have given an order for one oil burner locomotive of the 2-8-8-2 type to the Baldwin Locomotive Works. The Administrative Board of the National Railways of Colombia, is located in the Edificio del Banco de la Republica, Bogota, Colombia; Roberto J. Herrera, director.

FREIGHT CARS

The United States Department of the Interior, Bureau of Reclamation, Denver, Col., has ordered two four-wheel flat cars of 50 tons' capacity from the American Car & Foundry Company.

IRON AND STEEL

The Chesapeake & Ohio is inquiring for 800 tons of structural steel for a car dumper at Toledo, Ohio.

The New York Central is inquiring for about 500 tons of steel for a bridge to be built at East View, N. Y.

The Southern Railway System has let a contract to the Tennessee Coal, Iron & Railroad Company for 2,000 tons of rail for the account of the Cincinnati, New Orleans & Texas Pacific.

MISCELLANEOUS

Boston & Maine—The J. S. Coffin, Jr., Company, Englewood, N. J., has received orders from the Lima Locomotive Works, Inc., and Baldwin Locomotive Works for 10 Coffin feed water heater systems, to be applied to locomotives being built for the Boston & Maine.

Baltimore & Ohio.—The American Car & Foundry Company has placed an order with the Timken Roller Bearing Company, Canton, Ohio, for bearings and boxes for an eight-car high speed streamlined steam train which it is building for the Baltimore & Ohio at the St. Charles shops.

Supply Trade

Lawrence A. Rowe has been appointed special representative of the **MacLean-Fogg Lock Nut Company,** Chicago, with headquarters at Chicago.

The Howard P. Cook Company, 945 Main street, Bridgeport, Conn., and 140 South Dearborn street, Chicago, has taken over the entire sales to the railroad trade of Jenkins tape, manufactured by **Jenkins Bros.,** Bridgeport.

F. F. Seeburger has been appointed western manager for the **Railroad Accessories Corporation,** New York, effective October 1. Mr. Seeburger has acted as sales representative of the Ohio Brass Company during the past ten years.

OBITUARY

William E. Millhouse, president and treasurer of The Burden Iron Company, Troy, N. Y., died on September 25 at his home in Troy, at the age of 70 years. Mr. Millhouse had been connected with the company for over 50 years.

Hiram G. Hammett, president and founder of the Hammett Machine Works at Troy, N. Y., died at his summer home at Grafton on September 22. He was born in Auburn, Me., 76 years ago. After graduating from the Massachusetts Institute of Technology he entered the service of the Consolidated Safety Valve Company in Boston, as a mechanical engineer, later becoming assistant electrical engineer of the Boston & Albany Railroad. For a while he was engaged in the railway supply business in Chicago, and then, a little over 40 years ago, came to Troy, N. Y., and founded the Hammett Machine Works, manufacturing locomotive specialties and machinery. He took an active part in civic affairs, serving at one time as president of the Chamber of Commerce at Troy, and on the Harbor & Dock Commission and the Troy Port Commission. For many years he was a director of the Union National Bank, becoming a vice-president early in 1933. He was active in the affairs of the Society of Engineers of Eastern New York, serving at one time as its president. He was also a member of the American Society of Mechanical Engineers.

TRADE PUBLICATIONS

Aluminum Paint.—Aluminum paint—its uses and application in a wide diversity of fields, including the railroad—is discussed in a 62-page booklet issued by the Aluminum Company of America, Pittsburgh, Pa.

USS High-Tensile Steels.—Two interesting booklets on the characteristics and uses of USS Cor-Ten, USS Man-Ten and USS Sil-Ten have been issued by the United States Steel Corporation. The first of these high-tensile steels for light-weight construction is a low chromium copper silicon steel; the second, a medium manganese steel, and the third, a strong structural silicon steel. The names selected to designate these steels are partially indicative of either the individual characteristic or the predominating chemical element. For example, "Cor" denotes high corrosion resistance; "Man", manganese; "Sil", silicon, and "Ten", high tensile strength. These booklets can be obtained from any subsidiary company of the United States Steel Corporation.

Financial

Atchison, Topeka & Santa Fe.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its line between Havana, Kan., and Cedar Vale, 38.73 miles.

Atlantic Coast Line.—*Preferred Dividend.*—The directors of this company have declared a dividend of $2.50 a share on its 5 per cent preferred stock, payable November 10 to holders of record October 24. Payment of 2 per cent on the company's certificates of indebtedness was also provided for. The last previous payments on these two issues were in May, 1932.

Chesapeake & Ohio.—*Acquisition.*—The Interstate Commerce Commission has authorized this company under Section 5 (4) of the Interstate Commerce Act to purchase the railroad and other properties of the Chesapeake & Ohio Railway of Indiana, extending from Cincinnati, Ohio, to Hammond, Ind., 260.7 miles. The C. & O. owns all the stock of the Indiana company, except directors' qualifying shares and all its outstanding bonds.

Chicago & North Western.—*R. F. C. Loan.*—This company has applied to the Reconstruction Finance Corporation for an additional loan of $7,357,000 to meet interest on bonds, equipment trust obligations, and to provide in part for the maturing of underlying bonds due January 1. The company has previously borrowed from the R. F. C. $34,793,133, of which $3,384,000 has been repaid.

Chicago & North Western.—*P.W.A. Loan.*—This company has applied to the Public Works Administration for a loan of $5,650,557 for maintenance and equipment work. Application has also been made to the Interstate Commerce Commission for authority to issue ten-year notes and to pledge $13,000,000 of first and refunding mortgage bonds as collateral.

Chicago, Rock Island & Pacific.—*Bond hearing.*—The federal court at Chicago has set November 15 as the date for a hearing on a petition of the Bankers Trust Company as trustee for first mortgage bonds of the Chicago, Rock Island & Pacific seeking payment of principal and interest of the mortgage in gold of the former standard of value or in currency

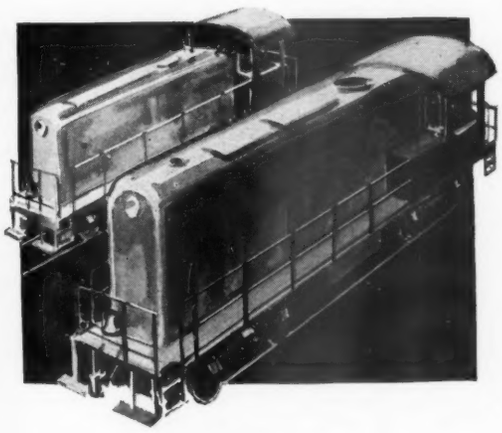
Continued on next left-hand page

RAILROAD DIESELS FOR RAILROAD MEN

The operating cost of Alco Diesel Locomotives based on three years' operating experience is as follows:

COST PER HOUR

ITEM	300 H.P.	600 H.P.
Repairs and running maintenance	$ .2950	$ .4920
Fuel at 4c per gal.	.1400	.2800
Lub. oil at 50c per gal.	.032	.0400
Other supplies	.029	.0136
Wages of Crew	.8220	.8300
Total	$1.3180	$1.6556
Total Hours per year	7500	8000



In computing cost of lubricating oil no credit was given for the oil removed from crank case every 90 days of 2000 hours of service.

This advertisement (No. 12 of a series) presents another of the many factors which, all combined, make the ALCO Diesel an outstanding purchase.

AMERICAN LOCOMOTIVE COMPANY

ALCO DIESEL

30 CHURCH STREET · NEW YORK · N.Y.

of an equivalent to the former gold standard of the nation.

LOS ANGELES & SALT LAKE.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Milford, Utah, to Newhouse, 22.37 miles.

MAINE CENTRAL.—*Notes.*—The Interstate Commerce Commission has authorized this company to issue and reissue $437,500 of promissory notes and to pledge as collateral security therefor, $621,000 of Portland & Ogdensburg 4½ per cent first mortgage bonds.

ST. LOUIS-SAN FRANCISCO.—*Equipment Trust Certificates.*—Trustees of this company have announced their readiness to purchase at not more than face value, without interest since maturity, its equipment trust certificates, series BB, which matured February 15 last, together with interest coupons maturing on that date of all series BB certificates; also, interest coupons which matured on March 1 last on its equipment trust certificates, series AA.

SOUTHERN PACIFIC.—*Abandonment.*—The Interstate Commerce Commission has authorized the Texas & New Orleans to abandon 7.5 miles of its Gallatin-Rusk, Tex., branch and to abandon operation of the remainder of the branch, 0.8 mile, at Rusk. It has been authorized to operate under trackage rights over the St. Louis Southwestern between Jacksonville and Rusk, 15.5 miles.

Abandonment.—The Interstate Commerce Commission has authorized this company to abandon a branch line extending from Magnesite Junction, Calif., to Howton, 3.1 miles

WABASH.—*Abandonment.*—The Interstate Commerce Commission has authorized this company and its receivers to abandon a branch extending from Shumway, Ill., to a connection with the B. & O. at Altamont, 9.5 miles, and to abandon operation under trackage rights from the point of connection with the B. & O. to the latter's station at Altamont, 0.9 mile.

Average Prices of Stocks and of Bonds

	Sept. 25	Last week	Last year
Average price of 20 representative railway stocks..	35.88	33.14	41.21
Average price of 20 representative railway bonds..	73.02	70.90	68.27

Dividends Declared

Atlantic Coast Line.—Preferred, $2.50, payable November 10 to holders of record October 24.

Cincinnati Sandusky & Cleveland.—Preferred, $1.50, semi-annually, payable November 1 to holders of record October 23.

Norfolk & Western.—Preferred, $1.00, payable November 15 to holders of record October 31.

THE TRAFFIC AND TRANSPORTATION ASSOCIATION OF PITTSBURGH held its final golf outing of the season on September 15. In the feature event of the day, which was the championship golf match, E. R. Paul, commercial agent of the Erie, won over C. E. Armstrong, general agent of the Reading. Mr. Paul was presented with a wood and silver plaque, which is known as the Pugh trophy.

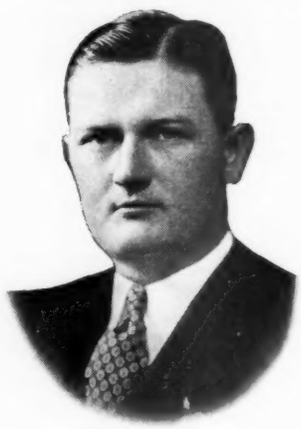
Railway Officers

EXECUTIVE

N. M. McMillan, assistant to the general manager of the Canadian Pacific, with headquarters at Montreal, has been appointed assistant to the vice-president and general manager.

H. C. Weller, general superintendent of the Western General division of the Norfolk & Western, with headquarters at Bluefield, W. Va., has been appointed resident vice-president, with headquarters at Norfolk, Va., effective October 1.

J. O. Couch. whose appointment as assistant to president of the Louisiana & Arkansas and the Louisiana, Arkansas & Texas was noted in the *Railway Age* of September 22, was born on October 1, 1904, in Athens, La. He attended Henderson Brown College, Arkadelphia, Ark., and was graduated from Virginia Military Institute, Lexington, Va. (B. S. degree), and completed the student course at Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa. (E. E. degree 1926-27). Mr. Couch entered the service of the Louisiana & Arkansas in July, 1929, as chainman in the engineering department and was promoted to rodman in January, 1930. In April, 1931, he was appointed electrical engineer of the mechanical department at Minden, La., and became industrial engineer in charge of industrial and agricultural development in January, 1932. In May, 1933, he was transferred to Shreveport, La., and assigned to special traffic solicitation work, serving in this capacity until his recent appointment as assistant to president in charge of all eastern solicitation.



(c) Bachrach

J. O. Couch

OPERATING

R. H. Smith, general superintendent of the Eastern General division of the Norfolk & Western, with headquarters at Roanoke, Va., has been transferred in the same position to the Western General division, with headquarters at Bluefield, W. Va., to succeed **H. C. Weller,** whose appointment as resident vice-president is announced elsewhere in these columns. **L. C. Ayers,** superintendent of the Shenandoah division, with headquarters at Roanoke, has been promoted to the position of general superintendent of the Eastern General division to replace Mr. Smith, and **James O'Keefe,** trainmaster on the Pocahontas division at Bluefield, W. Va., will succeed Mr. Ayers as superintendent of the Shenandoah division at Roanoke. The above appointments are effective October 1.

H. A. Benton, whose appointment as assistant general manager of the Seaboard Air Line at Norfolk, Va., was noted in the *Railway Age* of September 15, was born on November 11, 1883, at Monroe, N. C. He entered the service of the Seaboard Air Line in January, 1901, and until July, 1903, he served as baggage, seal and transfer clerk, flagman and yard conductor. In August, 1903, he entered the employ of the Mexican Railway as conductor and the following year he went with the Vera Cruz & Pacific as conductor. In September, 1905, he became yardmaster for the Mexican Central. From July, 1906, until September, 1925, he served successively with the Seaboard Air Line as yard conductor and night yardmaster at Monroe, N. C., night yardmaster at Abbeville, S. C., general yardmaster at the latter point, general yardmaster at Howells, Ga., and trainmaster of the Virginia and Georgia divisions. In September, 1925, he became division superintendent and in that capacity has, until his present appointment, served consecutively at Atlanta, Ga., Tampa, Fla., and Savannah, Ga.

Chester A. Johnston, who has been appointed superintendent of the St. Louis Terminal division of the Wabash, at St. Louis, Mo., was born on September 1, 1895, at Logansport, Ind., and was educated at Purdue University and at the University of Arizona. He entered railway service in 1917 in the engineering corps of the Pennsylvania at Louisville, Ky., being transferred to Indianapolis, Ind., after three years and then to Terre Haute, Ind., in 1922. He left the Pennsylvania to go with the Wabash in 1924 as assistant engineer at Decatur, Ill., and in 1926 he was appointed resident engineer in charge of second track construction at Adrian, Mich. Following the completion of this work in 1927, Mr. Johnston was appointed track supervisor of the Chicago Terminal division. Two years later he was advanced to division engineer of the Detroit division where he was appointed superintendent in 1930. In 1932 he was appointed division engineer of the Montpelier division, with headquarters at Montpelier, Ohio, where he was located at the time of his recent appointment as superintendent of the St. Louis Terminal division.

C. A. Cotterell, general superintendent of the British Columbia district of the Canadian Pacific, whose appointment as assistant general manager, with headquarters as before at Vancouver, B. C., was noted in the *Railway Age* of September 15, has been connected with the C. P. R. continuously for 44 years, with the exception of two years when he was with the Great Northern. He was born on January 18, 1876, and entered railway

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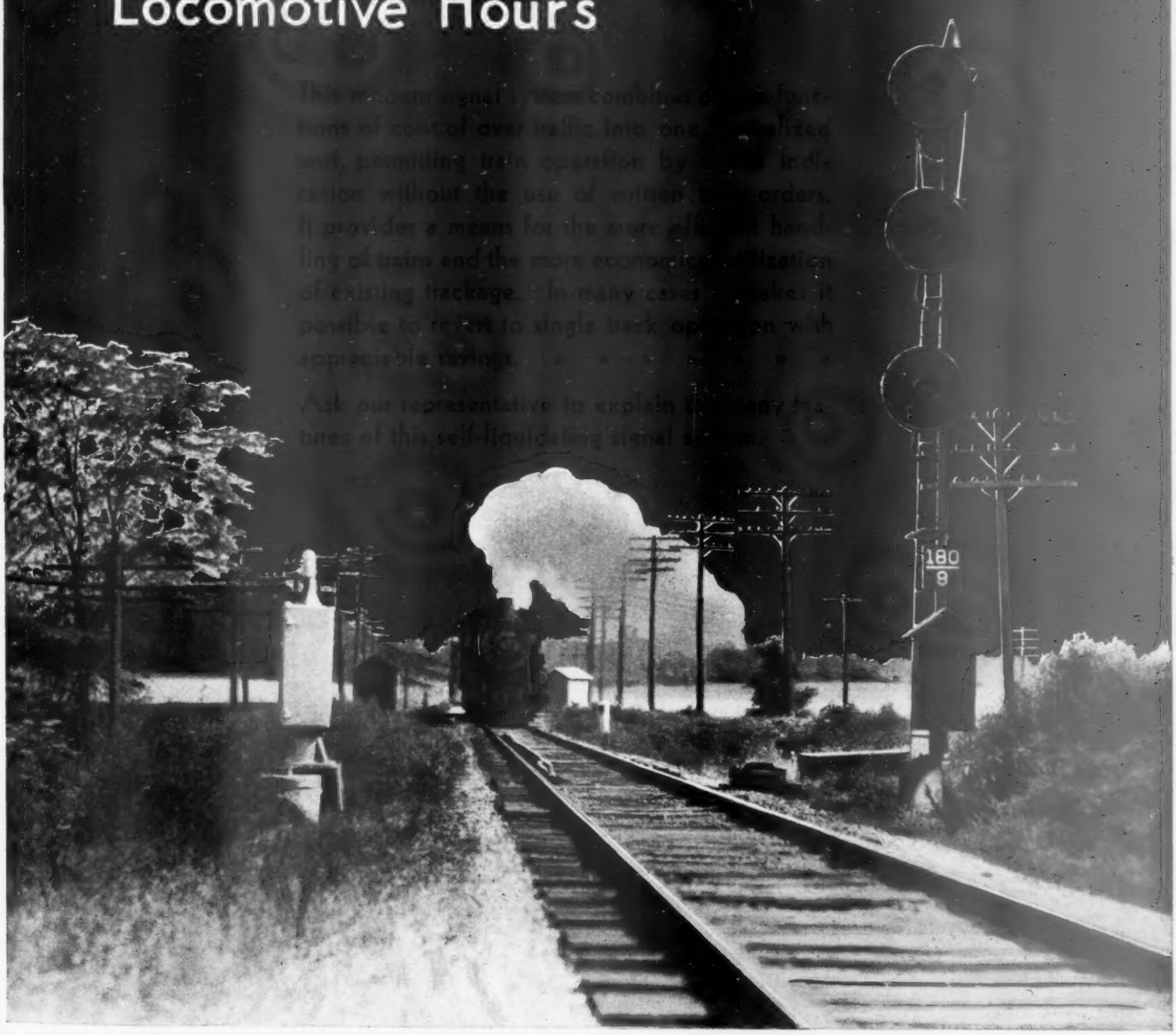
saves

Running Time
Stops or Reduction in Speed for Delivery of Train Orders
Necessity for Additional Trackage
Locomotive Hours



1881 **Union Switch & Signal Co.** 1934

SWISSVALE, PA.

NEW YORK MONTREAL CHICAGO ST. LOUIS SAN FRANCISCO

service in June, 1890, as a messenger on the Canadian Pacific, serving as operator, agent and train dispatcher at various points until January, 1901, when he was appointed dispatcher on the Fort William division, later being promoted to chief dispatcher of the same division. From September, 1906, to May, 1908, Mr. Cotterell served as a dispatcher and chief dispatcher on the Great Northern at Spokane, Wash., returning to the C. P. R. at the end of this period and serving as a pit foreman, trainmaster and chief dispatcher on the Saskatoon division until January, 1909. From the end of this period until May, 1913, Mr. Cotterell served as chief dispatcher, trainmaster and acting superintendent on the Revelstoke, Nelson and Vancouver divisions, then being appointed superintendent of the latter division. In April, 1916, he was transferred to the Lethbridge division, and in March, 1918, he was transferred to the Medicine Hat division. In October of the same year, Mr. Cotterell was promoted to assistant general superintendent of the British Columbia district, and in July, 1926, he was further advanced to general superintendent of the same district

C. A. Cotterell

with headquarters at Vancouver, which position he was holding at the time of his recent appointment.

TRAFFIC

E. M. Finch, whose appointment as assistant freight traffic manager for the Atlantic Coast Line was noted in the *Railway Age* of September 1, was born in Albany, N. Y., on January 30, 1884. He was educated in the public schools and high school in Montgomery, Ala., Barnes Preparatory School, Montgomery, and the University of Alabama, Tuscaloosa, Ala. Mr. Finch entered the service of the Atlantic Coast Line as stenographer in March, 1909, becoming traveling freight agent the following year. From March, 1912, to April, 1918, he served as commercial agent consecutively at Montgomery, Ala., Ocala, Fla., and Baltimore, Md. He then became supervisor of agencies at Lakeland, Fla. He was engaged in the lumber business for a year, returning to the A. C. L. as commercial agent at Savannah, Ga., in February, 1921. He again left railroad service in 1923 and in November, 1926, returned as commercial agent at Lake Wales, Fla. From October, 1927, until his present appointment he served successively as assistant to general freight agent, assistant general freight agent and foreign freight agent, all at Wilmington, N. C.

P. C. Reed, whose appointment as perishable traffic manager for the Pennsylvania was noted in the *Railway Age* of September 22, was born in Westfield, N. Y., on December 3, 1883. He entered the service of the Pennsylvania in 1897 and served in various clerical capacities in the general superintendent's office of the New Jersey division. During the World War he supervised the movement of all overseas traffic handled by the railroad through the Port of New York. In July, 1920, he was promoted to supervisor of freight and passenger train service, and eight years later was advanced to supervisor of perishable freight service at New York. Mr. Reed has just completed 27 years of service with the P. R. R.

P. C. Reed

Carll C. Beach, who has been appointed assistant to the freight traffic manager of the Union Pacific System, with headquarters at Omaha, Neb., as noted in the *Railway Age* of September 22, has been connected with this company continuously for 27 years. He was born on November 14, 1891, at Portland, Ore., and entered railway service in 1907 as an office boy in the general freight office of the Union Pacific at Portland. Mr. Beach was promoted through various positions in the freight office at Portland until 1929, when he was made general freight agent, with the same headquarters. He was holding this position at the time of his recent promotion to assistant to the freight traffic manager at Omaha.

Carll C. Beach

OBITUARY

F. G. Yost, for thirty-eight years an auditor with the Lehigh Valley, died at his home in Roselle, N. J., on September 25, after an illness of nearly a year. He was born 54 years ago at Sugar Loaf, Pa.

J. H. Ketner, assistant freight traffic manager for the Seaboard Air Line, with headquarters at Norfolk, Va., died on September 19. Mr. Ketner was born on October 25, 1877, at Atlanta, Ga., and entered the service of the Southern in December, 1897, and held various clerkships in the offices of the traffic manager and general freight agent. In 1902 he resigned to take up the study of surgery. From August, 1903, until March, 1905, he served successively as rate clerk and chief clerk in the office of the assistant general freight agent for the Seaboard Air Line at Savannah, Ga. Mr. Ketner became commercial agent at Montgomery, Ala., in March, 1905, and was put in charge of the commerce department at Norfolk, Va., in 1908, serving consecutively until August, 1926, as assistant to general freight agent in charge of the same department, assistant general freight agent and general freight agent, all for the Seaboard Air Line. In 1926 he was appointed assistant freight traffic manager, which position he held until his death.

Jule M. Hannaford, who retired in 1920 as president of the Northern Pacific, died on September 24 at St. Paul, Minn., at the age of nearly 84 years. Following his retirement from the presidency, Mr. Hannaford had continued as a member of the board of directors and had served the company continuously for 62 years. He was born on November 19, 1850, at Claremont, N. H., and entered railway service in June, 1866, as a clerk in the general freight office of the Vermont Central at St. Albans, Vt. On May 17, 1872, he entered the service of the Northern Pacific and served in the general freight and passenger office until 1879, when he was appointed assistant general freight and passenger agent. After two years in this position he was appointed general freight agent of the eastern division. In 1883 Mr. Hannaford was advanced to assistant superintendent of freight traffic, again being appointed general freight agent in the following year. In 1886 he was promoted to traffic manager and then to general traffic manager in 1890. Nine years later he was elected third vice-president and then second vice-president in 1902, being advanced to the presidency in 1913. From 1895 to 1906 he also served as general superintendent and vice-president of the Northern Pacific Express Co., then serving as president until 1913. During federal control of the railroads during the World War Mr. Hannaford acted as federal manager of the Northern Pacific, resuming the presidency at the end of this period. He retired on December 1, 1920, but continued to act as a director until his death.

SEPTEMBER 29, 1934

Railway Age

FOUNDED IN 1856

PERFORMANCE THAT IS 99 4/10 PER CENT PERFECT

Record was kept on 397 cars equipped with the Pullman air conditioning system during the 1934 cooling season up to September 17th. During this period these cars were in cooling service 51,620 car days. Out of this total, interruptions in service occurred on only 318 car days . . . a performance 99 4/10% perfect.

PULLMAN CAR & MANUFACTURING CORPORATION

Pullman Bldg., Chicago • Russ Bldg., San Francisco • Munsey Bldg., Washington, D. C. • Webb Crawford Bldg., Birmingham

RELIABILITY IS THE FIRST REQUIREMENT IN AIR CONDITIONING

TRANSPORTATION LIBRARY

PULLMAN

DIRECT AXLE DRIVE AIR CONDITIONING SYSTEM

Question:

Can railroads *profitably* do their own locomotive and car scrapping?

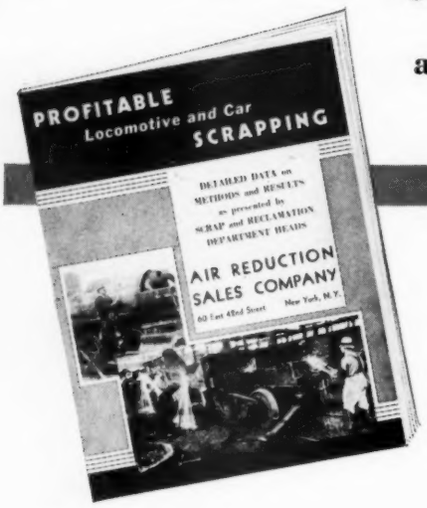
Answer:

YES... where the work is thoroughly systematized and efficiently handled.

Under this condition, returns from salvaged usable material and salable scrap exceed scrapping costs by a wide margin.

Evidence:

The experience of railroads that are doing their own scrapping and have been doing it long enough to get an accurate measure of results.


PROFITABLE
Locomotive and Car
SCRAPPING
DETAILED DATA on METHODS and RESULTS as presented by SCRAP and RECLAMATION DEPARTMENT HEADS
AIR REDUCTION SALES COMPANY
60 East 42nd Street New York, N.Y.

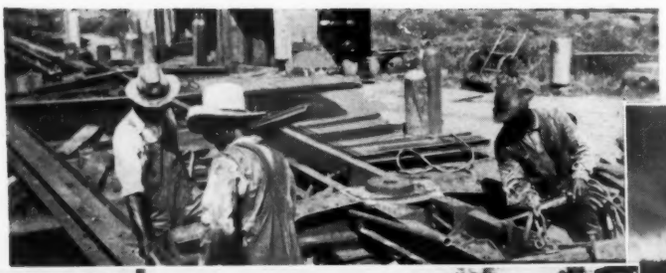
READ THIS BULLETIN

It contains reprints of articles by heads of Scrap and Reclamation Departments of several railroads telling how the work is organized and summarizing results. There is much of interest and value in these articles for all Scrap and Reclamation officials. A copy is yours for the asking.

AIR REDUCTION SALES CO.

General Offices: 60 E. 42nd St., New York, N. Y.

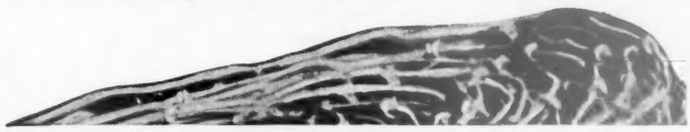
DISTRICT OFFICES and DISTRIBUTING STATIONS in PRINCIPAL CITIES



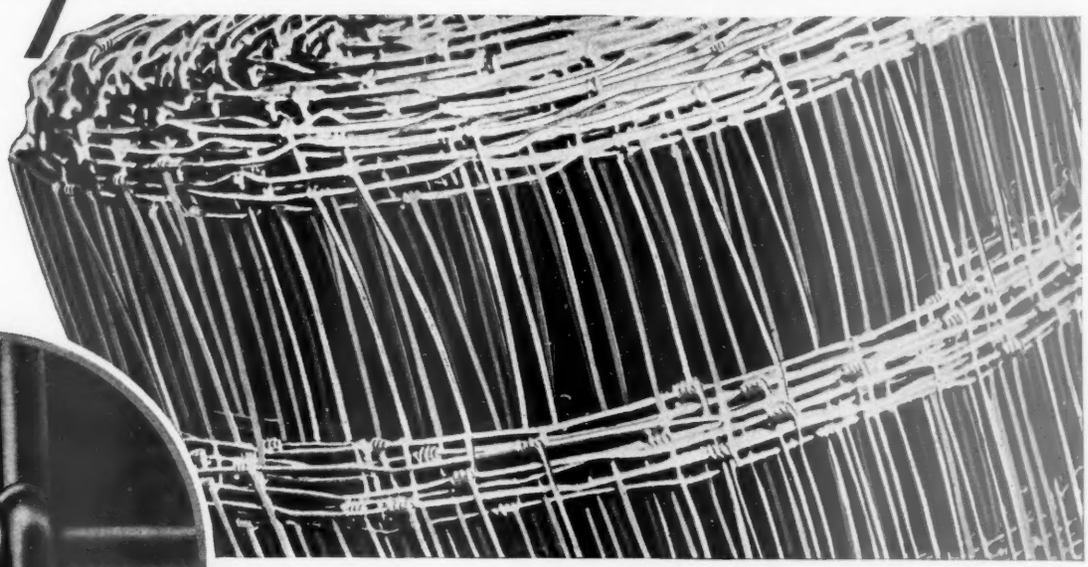
Scrapping wooden freight cars in the yards of a Western railroad. Cars are first stripped of parts in usable condition, then burned, and the framework quickly reduced to salable scrap with AIRCO Cutting Torches and AIRCO Oxygen and Acetylene.

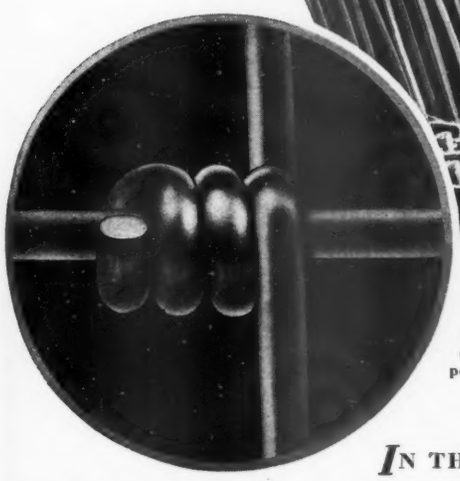
Published weekly by Simmons-Boardman Publishing Company, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter. January 4, 1933, at the Post Office at Philadelphia, Pa., under the Act of March 3, 1879.

This NEW PROCESS OF ZINC-COATING



ADDS *Years* TO FENCE LIFE!





Fence can be woven of heavily-coated Bethanized Wire without the slightest cracking at the wrapped joints.

IN THE PAST the possible length of life of wire fence has been subject to two inherent limitations of zinc-coating processes—the weight of zinc that could be applied, and the ability of the coating to stand weaving.

The recent introduction of fence made from Bethanized Wire marks a clean breakaway from these restrictions. With the Bethanizing process it is possible to apply coatings of twice or even three times the maximum weight that could be applied by older galvanizing methods. And, because of the tightness and ductility of the coating, this heavily-protected wire can be woven into fence without fracture or flaking of the zinc.

Not only can much heavier zinc coatings be used on Bethanized Fence, but the Bethanized coating is of the purest zinc ever manufactured commercially. Because of this, it is believed to offer exceptionally high resistance to corrosion. Further, the thickness is uniform; there are no thin places to give out while the rest of the coating is still good.

Write for new folder giving further information about Bethanized Wire, the new zinc-coated wire that is used in making Bethanized Fence.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

District Offices: Atlanta, Baltimore, Boston, Bridgeport, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Houston, Indianapolis, Milwaukee, New York, Philadelphia, Pittsburgh, St. Louis, St. Paul, Washington, Wilkes-Barre, York. *Pacific Coast Distributor:* Pacific Coast Steel Corporation, San Francisco, Seattle, Los Angeles, Portland, Honolulu. *Export Distributor:* Bethlehem Steel Export Corporation, New York.

BETHANIZED FENCE

BETHLEHEM STEEL

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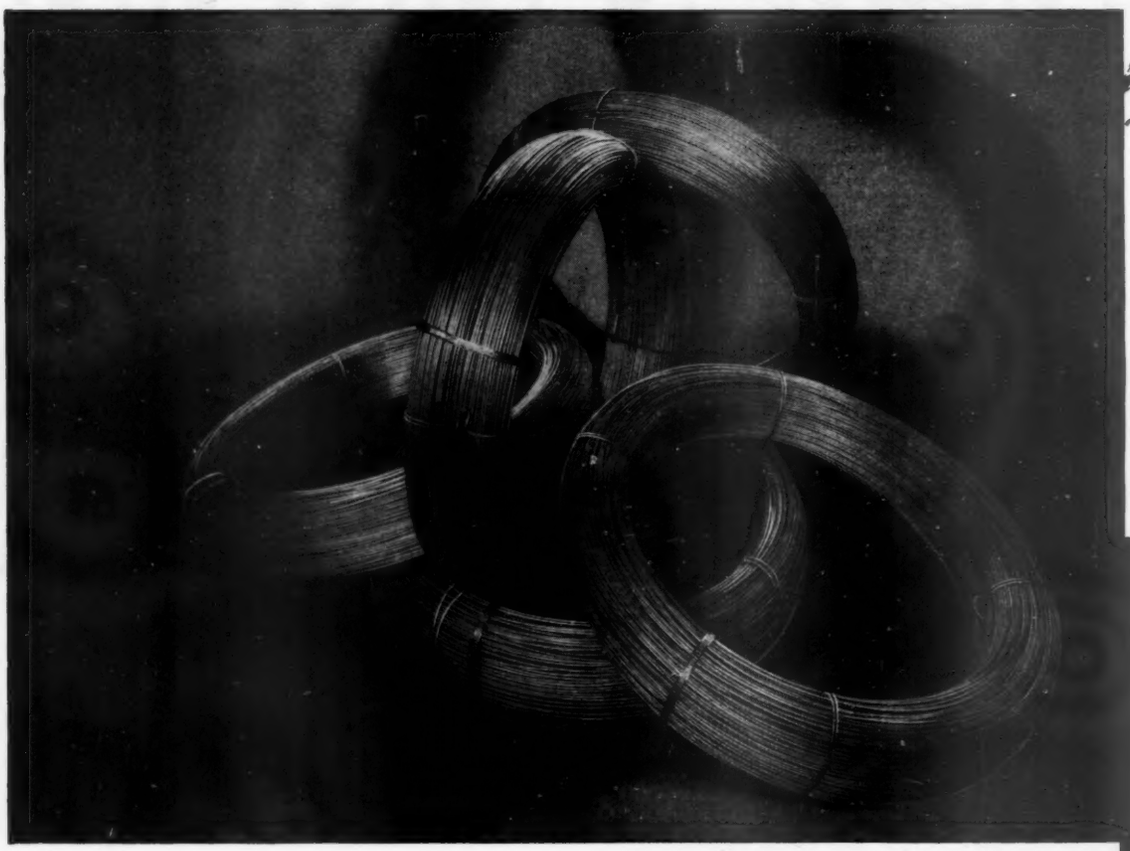

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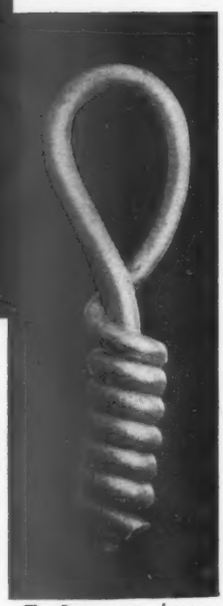

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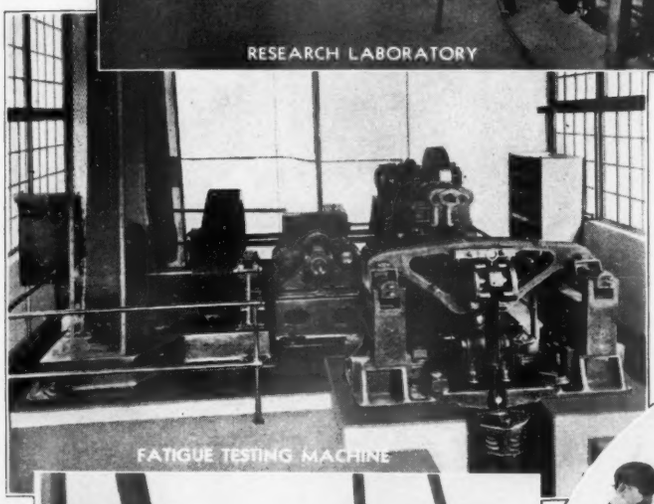
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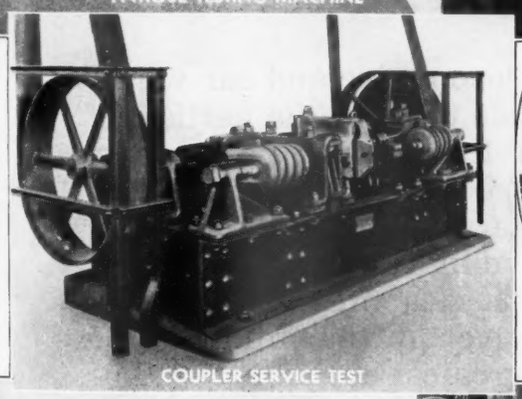
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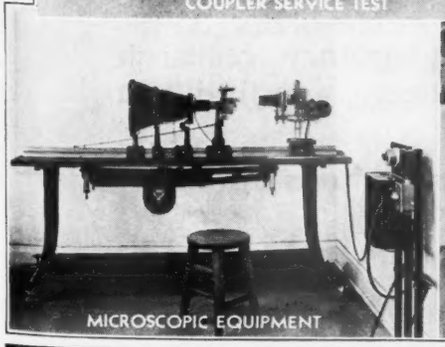
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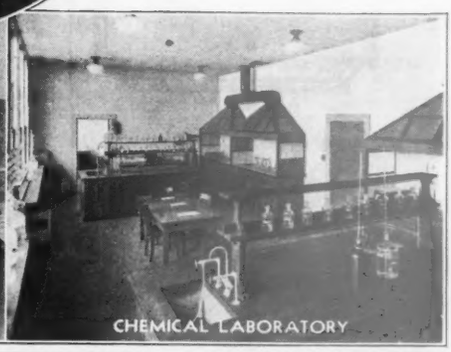
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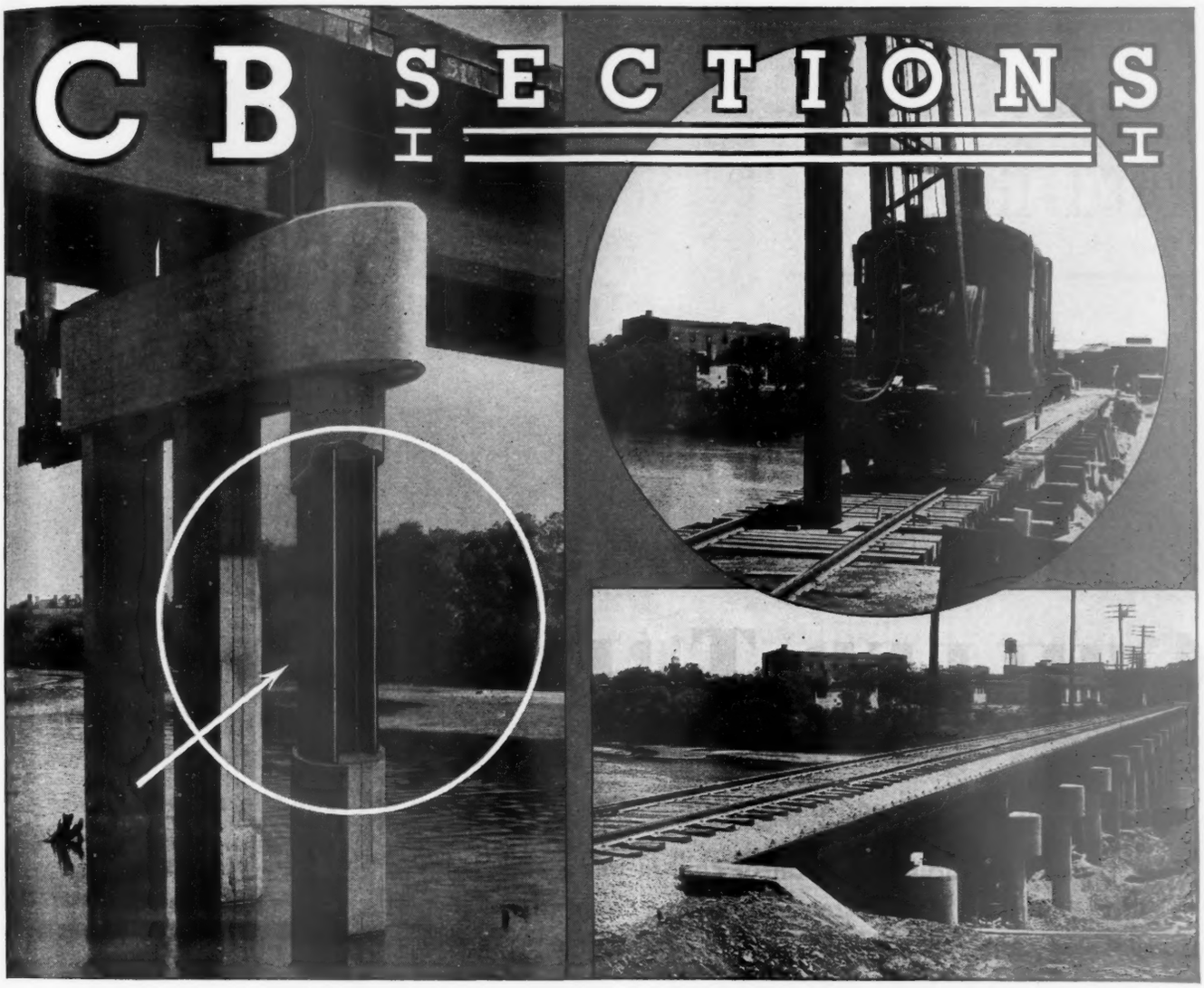

● *The above photograph shows diagramatically the manner in which the steel bearing piles are encased in concrete*

● ABOVE: *The steel bearing piles were driven through the deck of the old structure, without interruption to railway service*

● BELOW: *The finished structure, a Missouri Pacific Railroad Co. bridge at Wichita, Kansas*

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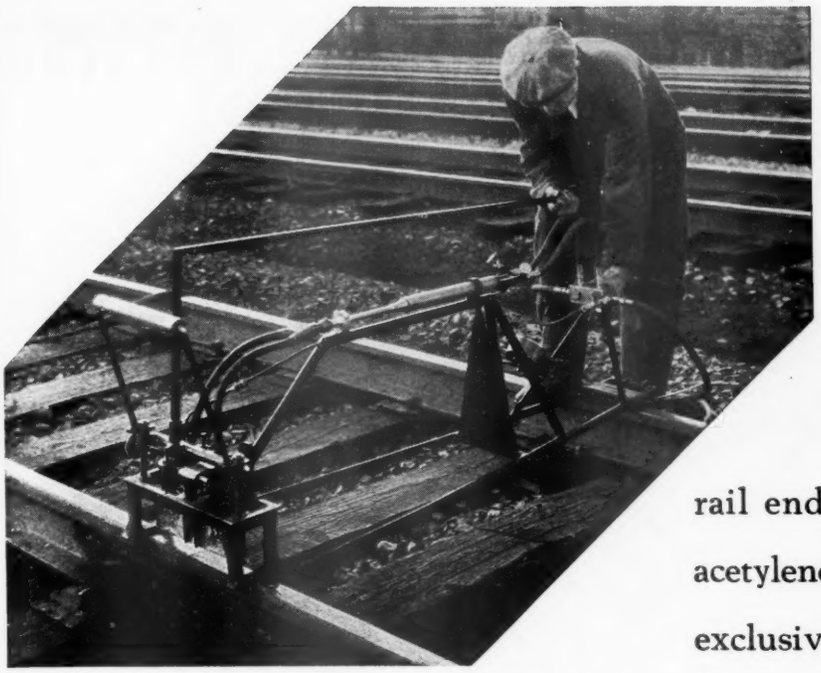

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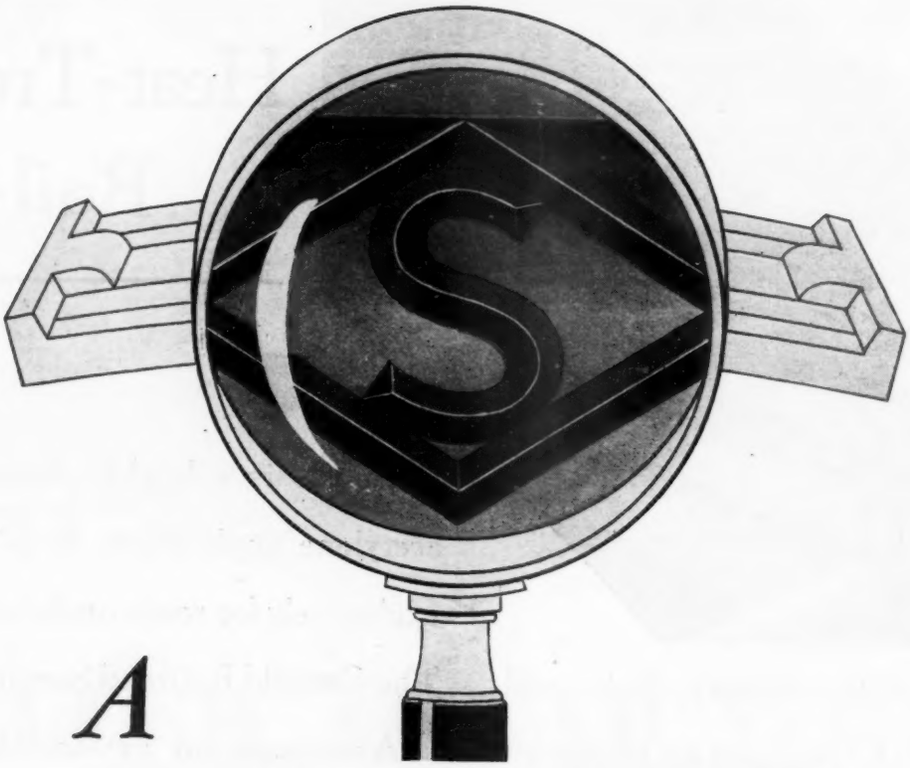

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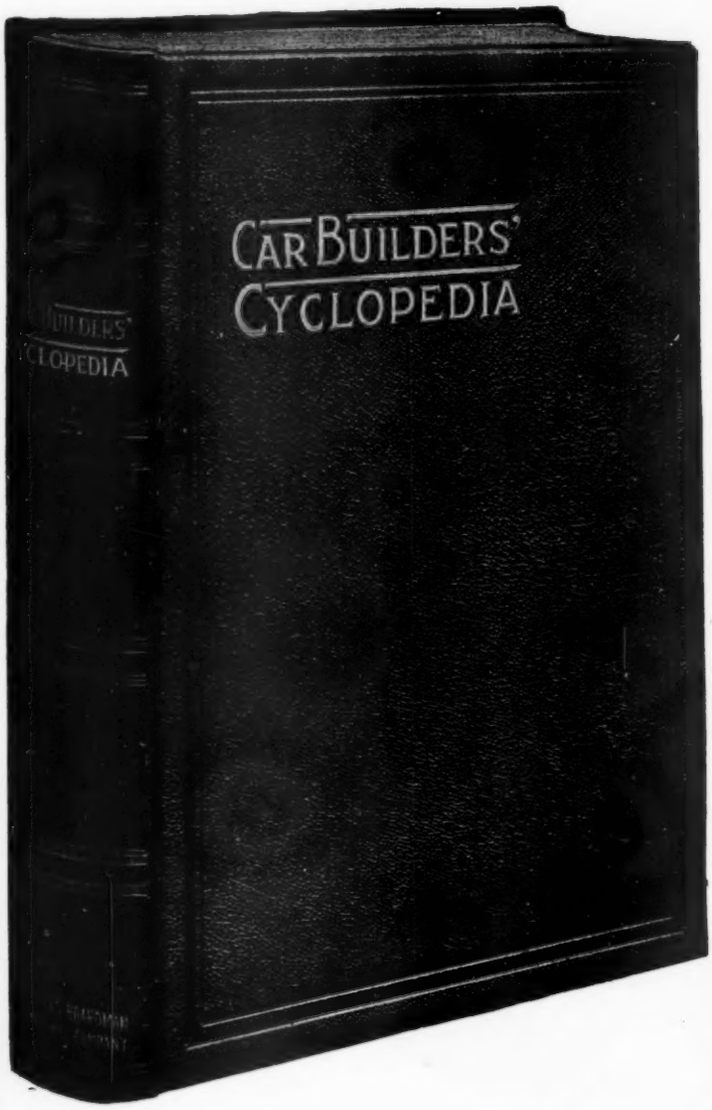

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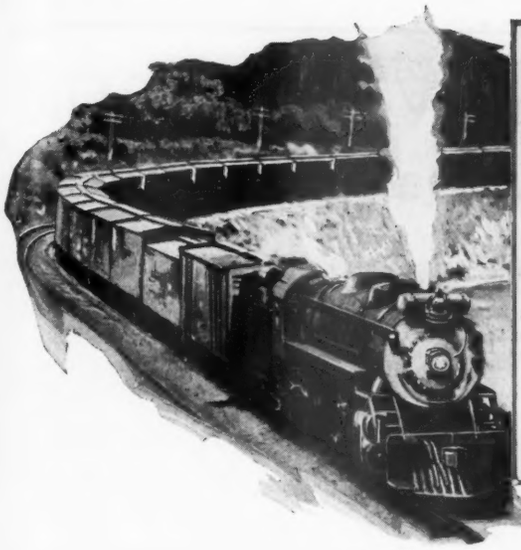

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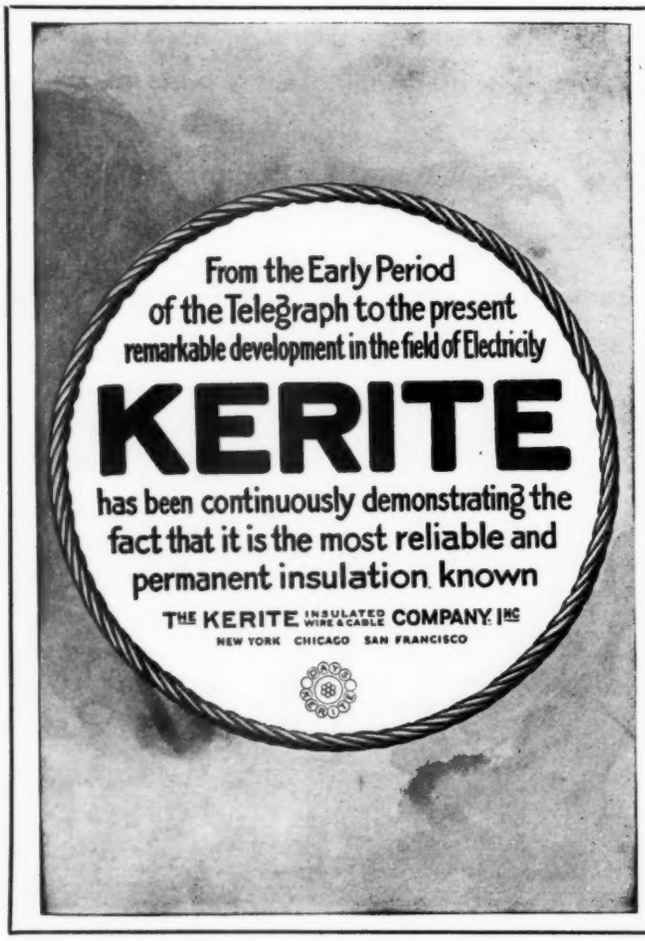
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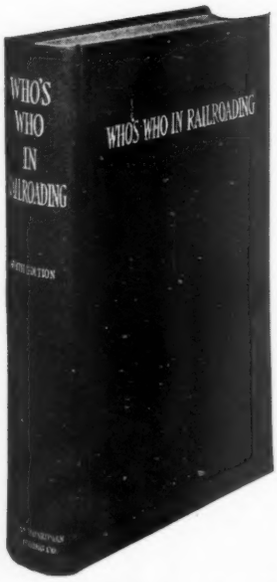

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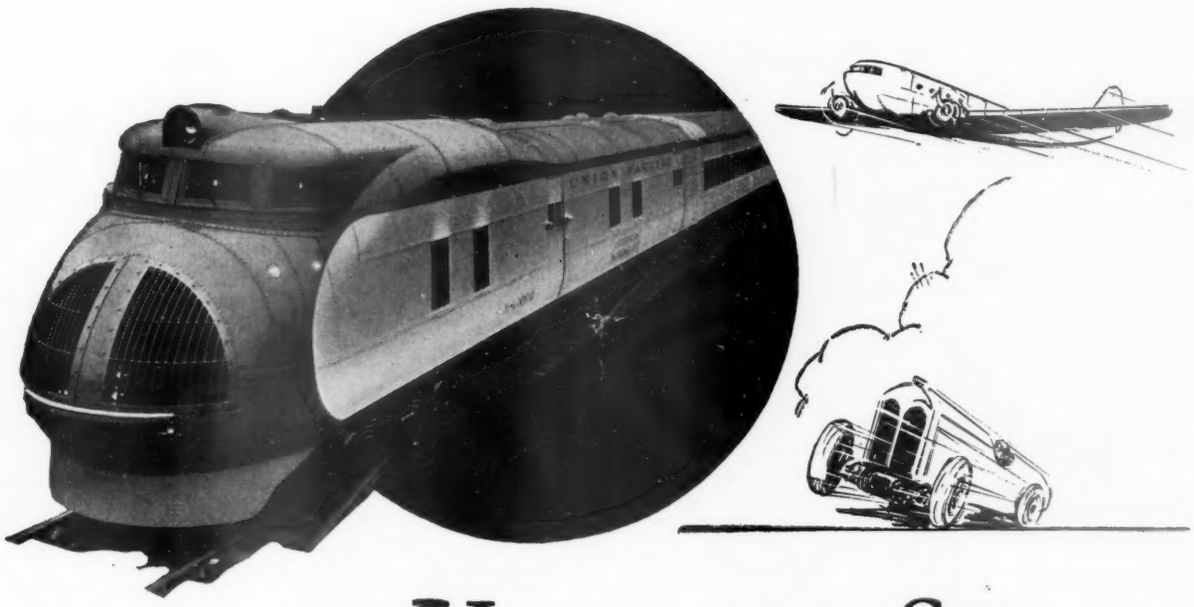

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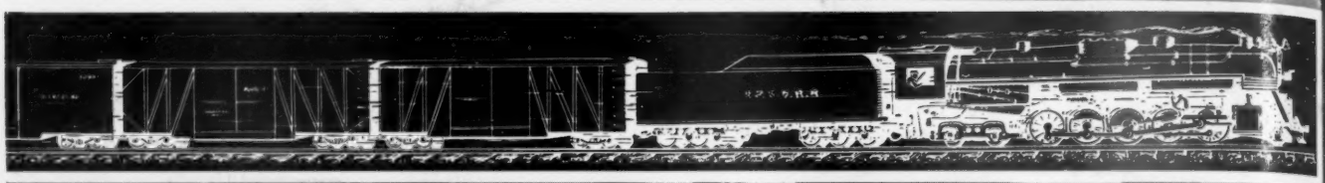

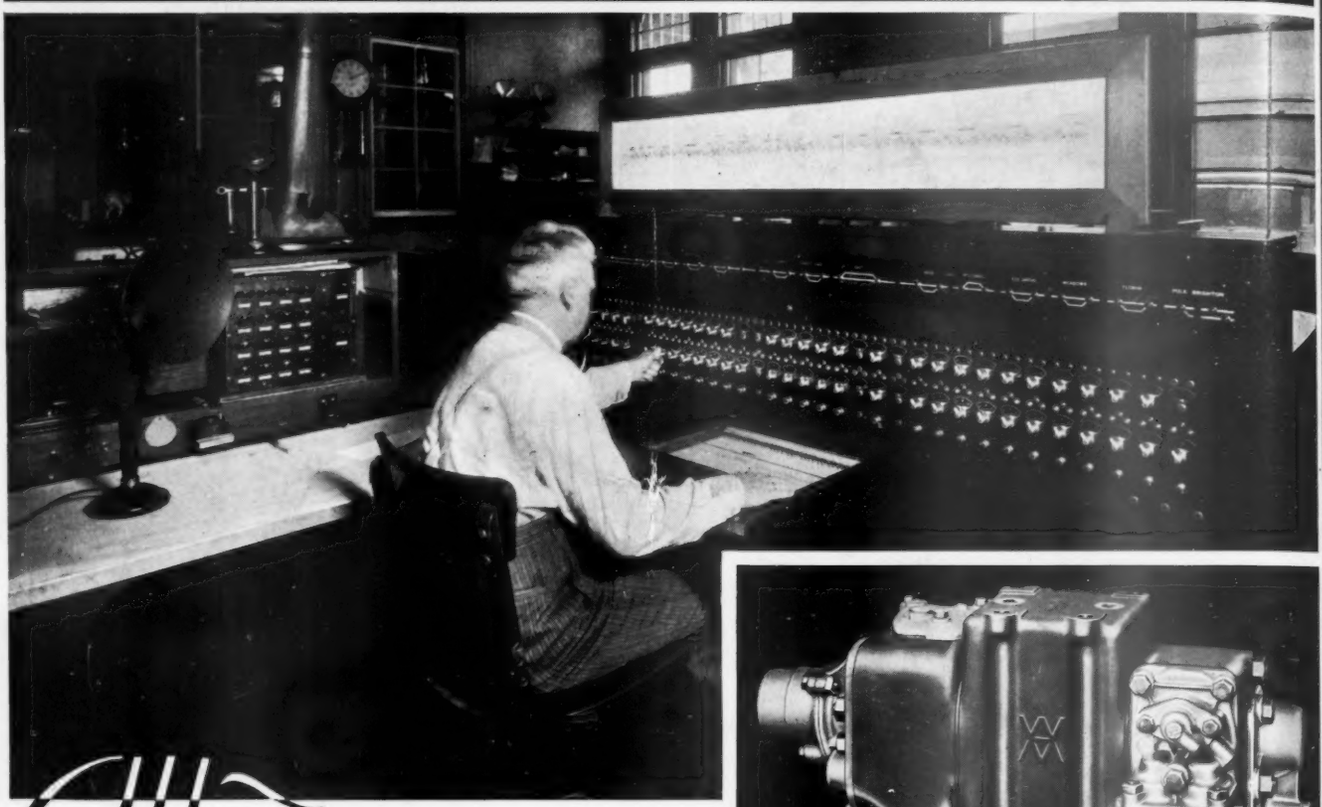

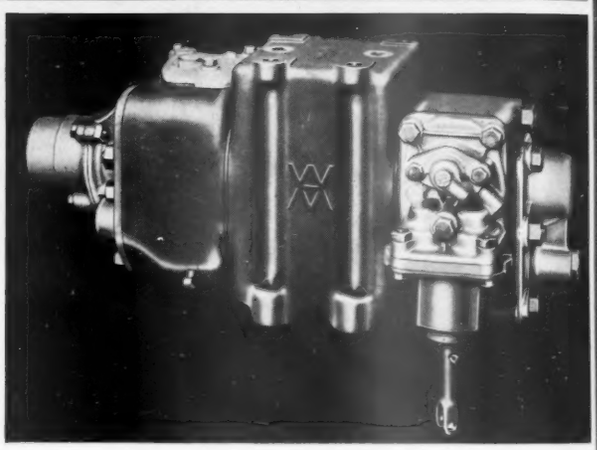

All Trains moving on Schedule" -reports the Train Dispatcher

THE Dispatcher is gratified when he can report that trains are moving over the division on schedule time, when there are no delays to disrupt the system . . . What keeps trains moving? The "AB" brake equipment does its part. It assures short smooth stops by virtue of positive, uniform, and reliable action; it permits a quick "get away" after a stop or slow-down because of prompt, certain, and complete release throughout a train. It is a stimulus to the maintenance of higher schedule speeds — with perfect safety.

WESTINGHOUSE AIR BRAKE CO.

General Office and Works, Wilmerding, Penna.